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Rubber Erasers . . . 69
Rulers and Paper Cutters . 140¼
Ruling Pen, Alteneder's Lever 118⅞
Sable Brushes, Black . . 46
Section Liner and Shader . 172 a
Seton Adhesive Mounting and Binding Tape . . 198
Sketching Easel . . . 83 c
Solar Paper, Vandyke . . 165 a
Strathmore Boards . . 63⅞
Tables, Drawing, 87 to 87⅞ h, 87⅞ o
Tracing Paper, Bond, in rolls, 63⅞
Transits, Reconnoissance . 129 j
Transparent Protractors . 140¼
Vandyke Solar Paper . . 165 a
Water Colors, Moist, Rowney's 15¼
Water Colors, Newman's Slow Drying . . . 14⅞
Waterman's Fountain Pens . 196

FROST & ADAMS CO'S CATALOGUE.

SECTION I.

WATER COLORS,

COMPRISING

WATER COLORS IN CAKES AND HALF CAKES, FITTED BOXES OF DITTO; MOIST COLORS IN PANS AND HALF PANS, FITTED BOXES OF DITTO; WATER COLOR LIQUIDS; INDIAN INK; &c.

TRADE MARK.

W. & N.

Winsor & Newton's Water Colors.

Previous to the establishment of the house of Winsor and Newton (in 1832), the evil repute of want of permanence attached to the *Water Colors* in ordinary use; and the most beautiful productions of Water Color Art were inevitably fugitive through the instability of the materials employed.

This deplorable state of so beautiful and purely an art, urged Winsor and Newton to earnest inquiry and research, with a view of raising the character of the material employed.

Their first care was to exclude, as far as possible, all objectionable pigments; and to bring forward and recommend only colors that could be relied on for permanence, and from which purity and richness of tone were obtainable.

They next turned their attention to the employment of machinery in grinding, and overcame all difficulties on this score in 1840.

The high standard of excellence sought by Winsor and Newton entirely set aside all common recipes and pernicious compounds, and rendered indispensable the aid of Chemical Science. Consequently perfectly appointed Chemical Works were established by them in 1844.

The advantageous results of the establishment of these Works were apparent in the production of colors totally different from previous manufactures. The old colors were improved and new ones introduced. Of WINSOR & NEWTON'S WATER COLORS, therefore, it may be stated, that sound chemical knowledge and complete laboratory plant and apparatus,—powerful and specially adapted machinery,—and the matured experience of many years, ensure *purity of Pigment, exquisite fineness, and a most perfect form of preparation for the Artist's palette.*

Winsor & Newton's Finely Prepared

Water Colors in Dry Cakes and Half Cakes.

CAKE.

HALF CAKE.

No. 1. WHOLE CAKES, 25 CENTS; HALF CAKES, 13 CENTS.

Antwerp Blue	Flake White	Payne's Grey
Bistre	Gamboge	Prussian Blue
Blue Black	Hooker's Green, No. 1	Prussian Green
British Ink	Hooker's Green, No. 2	Raw Sienna
Brown Ochre	Indigo	Raw Umber
Brown Pink	Indian Red	Red Chalk
Bronze	Italian Pink	Red Lead
Burnt Roman Ochre	Ivory Black	Red Ochre
Burnt Sienna	King's Yellow	Roman Ochre
Burnt Umber	Lamp Black	Sap Green
Chinese White	Light Red	Terre Verte
Chrome Yellow	Naples Yellow	Vandyke Brown
Cologne Earth	Neutral Tint	Venetian Red
Deep Chrome	New Blue	Vermilion
Dragon's Blood	Olive Green	Yellow Lake
Emerald Green	Orange Chrome	Yellow Ochre

No. 2. WHOLE CAKES, 45 CENTS; HALF CAKES, 23 CENTS.

Black Lead	Mars Yellow	Scarlet Lake
Brown Madder	Neutral Orange	Scarlet Vermilion
Chalon's Brown	Purple Lake	Sepia
Crimson Lake	Roman Sepia	Warm Sepia
	Ruben's Madder	

No. 3. WHOLE CAKES, 55 CENTS; HALF CAKES, 28 CENTS.

Cobalt Blue	Orange Vermilion	Violet Carmine
	Indian Yellow	

No. 4. WHOLE CAKES, 90 CENTS; HALF CAKES, 45 CENTS.

Aureolin	Gallstone	Pink Madder
Burnt Carmine	Green Oxide of Chro'um	Pure Scarlet
Cadmium Orange	Indian Purple	Rose Madder
Cadmium Yellow	Intense Blue	Viridian
Carmine	Lemon Yellow	
French Blue	Pale Cadmium Yellow	

No. 5. WHOLE CAKES, $1.40; HALF CAKES, 70 CENTS.

Field's Orange Vermil.	Mars Orange	Smalt
Madder Carmine	Purple Madder	Ultramarine Ash

No. 6. HALF CAKES, $4.00; QUARTER CAKES, $2.00.

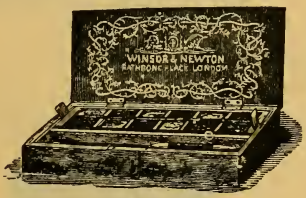
Genuine Ultramarine

Winsor & Newton's French Polished Mahogany

Whole Cake Boxes of Water Colors.

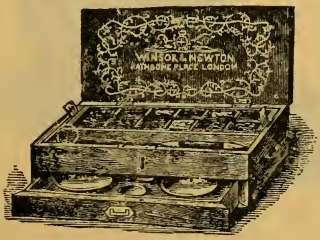
SLIDE COVER BOXES.

No. 7.	6 Cake "Slide Cover" Box, with Brushes,	$2.00
	12 Cake, ditto,	4.25
	18 Cake, ditto,	6.25



LOCK BOXES.

No. 8.	12 Cake "Lock" Box, with fittings,	$5.00
	18 Cake, ditto,	7.00

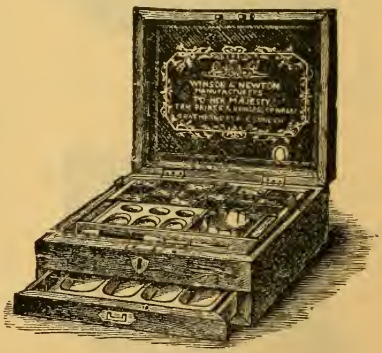


LOCK AND DRAWER BOXES.

No. 9.	12 Cake, "Lock and Drawer" Box, with fittings,	$6.00
	18 Cake, ditto,	7.75

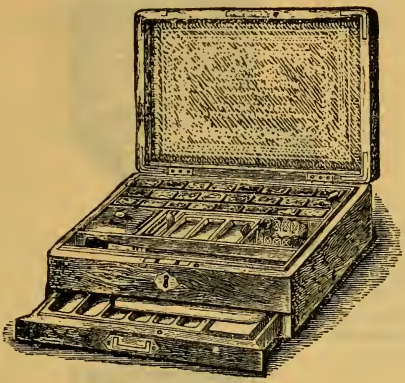
COMPLETE BOXES.

No. 10.	12 Cake "Complete" Box, with fittings,	$7.50
	18 Cake, ditto,	10.00
	24 Cake, ditto,	13.75



CADDY LID BOXES.

No. 11	12 Cake "Caddy Lid" Box, with full fittings,	$10.75
	18 Cake, ditto,	14.25
	24 Cake, ditto,	21.00



HANDSOME BOXES.

No. 12.	12 Cake "Handsome" Box, with first-class fittings,	$28.00
	18 Cake, ditto,	35.00
	24 Cake, ditto,	50.00
	36 Cake, ditto,	78.50

Winsor & Newton's French Polished Mahogany

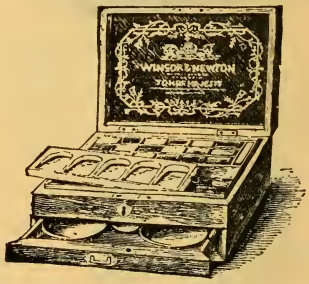
Half Cake Boxes of Water Colors.

SLIDE COVER BOXES.

No. 13.	6 Half Cake "Slide Cover" Box, with Brushes,	$1.30
	12 Half Cake, ditto,	2.20
	18 Half Cake, ditto,	3.25
	24 Half Cake, ditto,	4.25

LOCK BOXES.

No. 14.	12 Half Cake "Lock" Box, with fittings,	$3.15
	18 Half Cake, ditto,	4.15
No. 15.	12 Half Cake "Lock and Drawer" Box, with fittings,	$4.00
	18 Half Cake, ditto,	5.00
No. 16.	12 Half Cake "Complete" Box, with fittings,	$4.50
	18 Half Cake, ditto,	5.75



CADDY LID BOXES.

No. 17.	12 Half Cake "Caddy Lid" Box, with full fittings,	$6.75
	18 Half Cake, ditto,	8.25

Miscellaneous Water Colors, &c.

No. 18.	Chenal's French Water Colors, Whole Cakes, Solferino, Magenta, Mauve, per cake,	.17
No. 19.	School of Art Color Box, containing ten colors with brushes,	.50
No. 19½.	Murillo Color Box: 16 pans of superior moist color, tubes of Chinese White and Sepia, 4 C. H. Pencils, in Japanned Box,	1.25
No. 19¾.	Rembrant Color Box: 12 moist pans, Brushes, in Japanned Box,	.50
No. 20.	Cassell's Toy Color Boxes, ranging in price per box from .40 to	$1.20
	A large variety of cheap Toy Color Boxes constantly on hand.	
No. 21.	Glass Medium, for Water Color Painting, per bottle,	.70

Frost & Adams Co's Superior

Finely-Prepared Artists' Water Colors.

In Whole and Half Pans.

No. 21½. Whole Pans, 20 Cents; Half Pans, 10 Cents.

Antwerp Blue
Bister
Blue Black
Blue Verditer
Brown Ochre
Brown Pink
Burnt Sienna
Burnt Umber
Charcoal Gray
Chinese White
Chrome, No. 1
Chrome, No. 2
Chrome, No. 3
Chrome, No. 4
Cologne Earth
Dragon's Blood
Emerald Green
Flake White
Gamboge
Hooker's Green, No. 1
Hooker's Green, No. 2
Indian Red
Indigo
Italian Ochre
Italian Pink
Ivory Black
King's Yellow
Lamp Black
Light Red
Magenta
Mauve
Naples Yellow
Neutral Tint
New Blue
Olive Green
Payne's Gray
Permanent Blue
Permanent White
Prussian Blue
Prussian Green
Purple
Raw Sienna
Raw Umber
Roman Ochre
Sap Green
Terre Vert
Vandyke Brown
Venetian Red
Verdigris
Vermilion
Yellow Lake
Yellow Ochre

Whole Pans, 40 Cents; Half Pans, 20 Cents.

Brown Madder
Chinese Orange
Cœruleum
Crimson Lake
Indian Lake
Indian Yellow
Italian Ultramarine
Mars Yellow
Neutral Orange
Orange Vermilion
Purple Lake
Scarlet Lake
Scarlet Vermilion
Sepia
Roman Sepia
Warm Sepia

Whole Pans, 50 Cents; Half Pans, 25 Cents.

Azure Blue
Azure Cobalt
Cadmium, pale
Cadmium. Yellow
Cadmium, Orange
Cadmium, Orange, deep
Cobalt
French Ultramarine
Intense Blue
Lemon Yellow
Malachite Green
Mars Orange
Pure Scarlet
Veronese Green
Violet Carmine

Whole Pans, 80 Cents; Half Pans, 40 Cents.

Aurora Yellow
Aureolin
Burnt Carmine
Carmine
Dahlia Carmine
Ex. Madder Carmine
Gallstone
Madder Lake
Pink Madder
Purple Madder
Rose Madder
Ultramarine Yellow

Whole Pans, $1.20; Half Pans, 60 Cents.

Deep Rose
Smalt
Ultramarine Ash

Newman's

"Slow Drying Tube," Moist Water Colors,

For the Studio or the Field.

30 CENTS PER TUBE.

Antwerp Blue
Bistre
Black Lead
Blue Black
British Ink
Bronze
Brown Pink
Burnt Roman Ochre
Burnt Sienna
Burnt Umber
Charcoal Grey
Chinese Vermillion
Chinese White
Chrome Yellow, No. 1
Chrome Yellow, No. 2
Chrome Deep
Chrome Orange
Cologne Earth
Dragon's Blood
Emerald Green
Flake White
Gamboge
Golden Ochre
Green Bice
Hooker's Green 1, Lt.
Hooker's Green 2, Dk.
Indian Red
Indigo
Italian Pink
Ivory Black
King's Yellow
Lamp Black
Light Red
Naples Yellow, Pale
Naples Yellow, Deep
Neutral Tint
New Blue
Olive Green
Orange Lead
Orange Ochre
Payne's Grey
Prussian Blue
Prussian Green
Purple
Purple Brown
Raw Sienna
Raw Umber
Red Chalk
Red Lead
Red Orpiment
Roman Ochre
Sap Green
Terre Verte
Vandyke Brown
Venetian Red
Verdigris
Verditer
Vermilion
Verona Brown
Yellow Lake
Yellow Ochre

50 CENTS PER TUBE.

Brown Madder
Ceruleum
Chalon's Brown
Constant White
Crimson Lake
Neutral Orange
Permanent Yellow
Purple Lake
Scarlet Lake
Scarlet Vermilion
Sepia
Sepia (Page's)
Sepia Roman
Sepia Warm
Turner Brown

65 CENTS PER TUBE.

Azure Blue
Cobalt Blue
Cobalt Green
Cyanine or Leitch's Blue
Indian Yellow

90 CENTS PER TUBE.

Aureolin
Cadmium Yellow 1
Cadmium Yellow 2
Cadmium Deep
Cadmium Orange
Carmine
Chromium Green Oxide
Chromium Transparent
French Blue
Indian Lake
Intense Blue
Intense Brown
Lemon Yellow
Malachite Green
Mars Brown
Mars Orange
Mars Red
Mars Violet
Mars Yellow
Orange Vermilion, No. 2, (as Field's)
Permanent Scarlet
Pink Madder
Rose Madder
Rubens Madder
Ultramarine Ash, Grey
Ultramarine, French
Veronese Green
Violet Carmine
Vividian
Yellow Madder

Harding's Miniature Tints—Auburn, Carnation, Dark and Fair Complexions, Demi-Tint and Shadow Color.

$1.40 PER TUBE.

Burnt Carmine
Gallstone
Pure Scarlet

$1.50 PER TUBE.

Carmine Madder
Madder Carmine
Madder Red
Permanent Crimson
Purple Madder
Smalt
Ultramarine Ash, Blue

$4.50 PER TUBE. Ultramarine, Pure

Winsor & Newton's

Moist Water Colors in Pans and Half Pans.

PAN.

HALF PAN.

No. 22. WHOLE PANS, 25 CENTS; HALF PANS, 13 CENTS.

Antwerp Blue
Bistre
Blue Black
Brown Ochre
Brown Pink
Burnt Sienna
Burnt Umber
Charcoal Grey
Chinese White
Chrome Yellow
Chrome Yellow Lemon
Cologne Earth
Deep Chrome
Emerald Green
Gamboge
Hooker's Green, No. 1
Hooker's Green, No. 2
Indigo
Indian Red
Italian Pink
Ivory Black
Lamp Black
Light Red
Mauve
Naples Yellow
Neutral Tint
New Blue
Olive Green
Orange Chrome
Payne's Grey
Prussian Blue
Prussian Green
Raw Sienna
Raw Umber
Roman Ochre
Sap Green
Terre Verte
Vandyke Brown
Venetian Red
Vermilion
Yellow Lake
Yellow Ochre

No. 23. WHOLE PANS, 45 CENTS; HALF PANS, 23 CENTS.

Alizarin Crimson
Brown Madder
Carmine Lake
Cerulean Blue
Crimson Lake
Cyanine Blue
Mars Yellow
Neutral Orange
Orange Vermilion
Purple Lake
Roman Sepia
Reuben's Madder
Scarlet Lake
Scarlet Madder
Scarlet Vermilion
Sepia
Warm Sepia
Indian Yellow

No. 24. WHOLE PANS, 55 CENTS; HALF PANS, 28 CENTS.

Cadmium Orange
Cadmium Yellow
Cadmium Yellow Pale
Cobalt Blue
Cobalt Green
French Blue
Green Oxide of Chro'um
Indian Purple
Intense Blue
Lemon Yellow
Mars Orange
Permanent Mauve
Pure Scarlet
Violet Carmine
Viridian

No. 25. WHOLE PANS, 90 CENTS; HALF PANS, 45 CENTS.

Aureolin
Aurora Yellow
Burnt Carmine
Carmine
Field's Orange Vermil.
Madder Carmine
Pink Madder
Primrose Aureolin
Purple Madder
Rose Madder
Yellow Carmine

No. 26. WHOLE PANS, $1.40; HALF PANS, 70 CENTS.

Smalt
Ultramarine Ash

George Rowney's Twopenny

Moist Water Colors in Compressible Tubes.

9 CENTS EACH ; $1.00 PER DOZEN. Net.

Burnt Sienna
Burnt Umber
Cobalt Blue
Carmine
Chinese White
Chrome Green
Chrome Yellow, Pale
Chrome Yellow
Chrome Yellow, No. 3
Crimson Lake
Emerald Green
Gamboge
Indian Red
Indigo
Lamp Black
Light Red
Ivory Black
Naples Yellow
Olive Green
Prussian Blue
Purple
Raw Umber
Raw Sienna
Sepia
Sap Green
Vandyke Brown
Vermilion
Ultramarine Blue
Yellow Ochre

Rowney's Penny Colors.

Childrens' Moist Water Colors in Half Pans.

6 CENTS EACH ; 60 CENTS PER DOZEN. Net.

Burnt Sienna
Burnt Umber
Chinese White
Carmine
Chrome Green
Chrome Yellow, Nos. 1, 2, 3
Crimson Lake
Emerald Green
Gamboge
Indigo
Indian Red
Light Red
Naples Yellow
Olive Green
Prussian Blue
Purple
Raw Umber
Raw Sienna
Rose Pink
Sepia
Sap Green
Scarlet Lake
Yellow Ochre
Violet
Venetian Red
Vandyke Brown
Vermilion

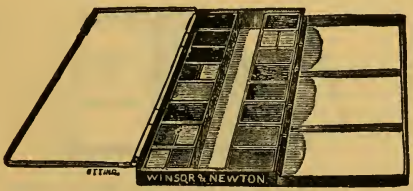
NOTE.—Winsor & Newton's Moist Colors are placed in pans of thin porcelain, and they are afterwards enclosed in tin-foil for greater security. When required for use, the foil is removed. A surface of color is then presented to the artist, which is obtainable in any quantity, simply by the application of a wet brush.

Their characteristic qualities of easy solubility and prompt readiness for use are retained, unimpaired, for an unlimited period of time; so that a box of them, which may have been laid aside for two or three years, when required for use will be found *no less serviceable than when first purchased.* While having this valuable quality of solubility in their solid form, they possess another and all important one, *in drying perfectly firm on the paper* when in use. Their tints, too, are pure and luminous, and their washes clear and even. Climate also fails to affect these colors.

In Sketching from Nature, and when representing transient and evanescent effects, the superiority of the Moist Colors is at once felt and appreciated. Ever ready for instant application, they enable the desired tint to be produced *at once.* It was this quality which, on their first introduction, secured for Winsor & Newton's Moist Colors the eminent popularity that they still enjoy with both professional and amateur artists.

Winsor & Newton's Japanned Tin

Whole Pan Boxes of Moist Water Colors.



JAPANNED TIN BOX OF MOIST WATER COLORS.

These Boxes are light and strong, with covers whose inner surfaces are enamelled with a dead white color, serving as palettes. *The Selections of Moist Colors placed in them have been made with much care, and after due study of the various lists of the first Water Color Artists.*

Prices of Empty Boxes will be found in Section 6, "JAPANNED WARE AND METAL WORK."

No. 27.	4 Pan Box, containing Raw Sienna, Light Red, Cobalt, and Vandyke Brown, ...	$2.50
	6 Pan Box, containing Gamboge, Yellow Ochre, Crimson Lake, Light Red, Prussian Blue, and Vandyke Brown, ...	3.00
	8 Pan Box, containing Gamboge, Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Cobalt, Indigo, and Vandyke Brown,	3.90
	10 Pan Box, containing Gamboge, Aureolin (½), Raw Sienna (½), Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Cobalt, Indigo, Brown Pink, and Vandyke Brown, ...	4.95

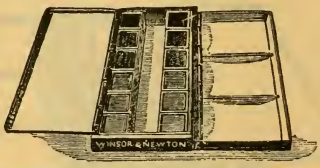
No. 27. 12 Pan Box, containing Gamboge, Aureolin (½), Raw Sienna (½), Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Vermilion (½), Indian Red (½), Cobalt, Indigo, Brown Pink, Vandyke Brown, and Neutral Tint, ... $5.50

16 Pan Box, containing Gamboge, Aureolin (½), Raw Sienna (½), Yellow Ochre, Lemon Yellow (½), Cadmium Yellow (½), Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion (½), Indian Red (½), Brown Madder, Cobalt, Indigo, Emerald Green (½), Viridian (½), Brown Pink, Vandyke Brown, and Neutral Tint, ... 8.90

18 Pan Box, containing Gamboge, Aureolin (½), Raw Sienna (½), Yellow Ochre, Lemon Yellow (½), Cadmium Yellow (½), Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion (½), Indian Red (½), Brown Madder, Purple Lake, Cobalt, Indigo, Emerald Green (½), Viridian (½), Brown Pink, Vandyke Brown, Neutral Tint, and Sepia, ... 9.95

Winsor & Newton's Japanned Tin

Half Pan Boxes of Moist Water Colors.



HALF PAN JAPANNED TIN BOX OF MOIST WATER COLORS.

No. 28. 6 Half Pan Box, containing Gamboge, Yellow Ochre, Crimson Lake, Light Red, Prussian Blue, and Vandyke Brown, . . $2.10

8 Half Pan Box, containing Gamboge, Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Cobalt, Indigo, and Vandyke Brown, ... 2.60

10 Half Pan Box, containing Gamboge, Raw Sienna, Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Cobalt, Indigo, Brown Pink, and Vandyke Brown, ... 3.00

12 Half Pan Box, containing Gamboge, Raw Sienna, Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Vermilion, Brown Madder, Cobalt, Indigo, Brown Pink, and Vandyke Brown, ... 3.45

16 Half Pan Box, containing Gamboge, Aureolin, Raw Sienna, Yellow Ochre, Cadmium Yellow, Burnt Sienna, Crimson Lake, Light Red, Vermilion, Indian Red, Brown Madder, Cobalt, Indigo, Brown Pink, Vandyke Brown, and Neutral Tint, . 4.95

No. 23. 18 Half Pan Box, containing Gamboge, Aureolin, Raw Sienna, Yellow Ochre, Cadmium Yellow, Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion, Indian Red, Brown Madder, Cobalt, Indigo, Emerald Green, Brown Pink, Vandyke Brown, and Neutral Tint, ... $5.64

20 Half Pan Box, containing Gamboge, Aureolin, Raw Sienna, Yellow Ochre, Cadmium Yellow, Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion, Indian Red, Brown Madder, Cobalt, French Blue, Indigo, Emerald Green, Oxide of Chromium, Brown Pink, Vandyke Brown, and Neutral Tint, . 6.65

24 Half Pan Box, containing Gamboge, Aureolin, Raw Sienna, Yellow Ochre, Lemon Yellow, Cadmium Yellow, Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion, Indian Red, Brown Madder, Purple Madder, Cobalt, French Blue, Prussian Blue, Indigo, Emerald Green, Oxide of Chromium, Brown Pink, Vandyke Brown, Neutral Tint, and Sepia, . . 8.35

Winsor & Newton's

Quarter Cake Boxes of Moist Water Colors.

QUARTER CAKE BOX OF MOIST WATER COLORS.

The Lists of Colors are the same as those of the Half Pan Boxes of Moist Water Colors (Page 17).

No. 29.

6 Quarter Cake Box of Moist Water Colors	$1.50	16 Quarter Cake Box of Moist Water Colors	$3.50
8 Quarter Cake ditto	2.00	18 Quarter Cake ditto	3.75
10 Quarter Cake ditto	2.20	20 Quarter Cake ditto	4.00
12 Quarter Cake ditto	2.50	24 Quarter Cake ditto	5.00
14 Quarter Cake ditto	3.00	30 Quarter Cake ditto	6.50

Winsor & Newton's

Japanned Tin Empty Quarter Cake Boxes.

No. 29¼. To hold:

6 Quarter Pans	Net, $1.10	16 Quarter Pans	Net, $2.00
8 Quarter Pans	" 1.25	18 Quarter Pans	" 2.10
10 Quarter Pans	" 1.35	20 Quarter Pans	" 2.25
12 Quarter Pans	" 1.50	24 Quarter Pans	" 2.35
14 Quarter Pans	" 1.75	30 Quarter Pans	" 2.50

Winsor & Newton's

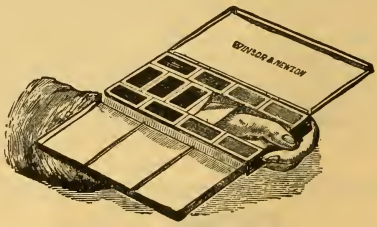
Half Pan Palette-Boxes of Moist Water Colors.

The Lists of Colors are the same as those of the Half Pan Boxes of Moist Water Colors (Page 17).

No. 29½. 6 Half Pan "Palette-Box" of Moist Water Colors, . $3.00
8 Half Pan ditto, ... 3.75
10 Half Pan ditto, ... 4.25
12 Half Pan ditto, ... 5.00

Winsor & Newton's Improved Japanned Tin

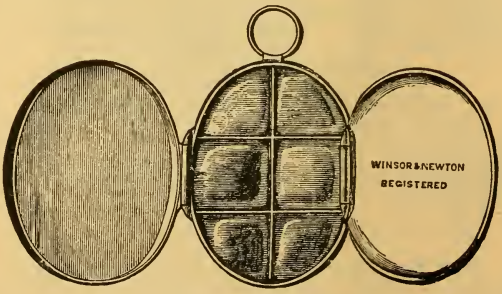
Thumb-Hole Boxes of Moist Water Colors.



THUMB-HOLE BOX.

No. 30.	11 Pan "Thumb-Hole" Box, containing 17 Colors, ...	$7.75
	17 Pan "Thumb-Hole" Box, containing 24 Colors, ...	11.50
	21 Pan "Thumb-Hole" Box, containing 28 Colors, ...	13.50

Winsor & Newton's Locket Box.

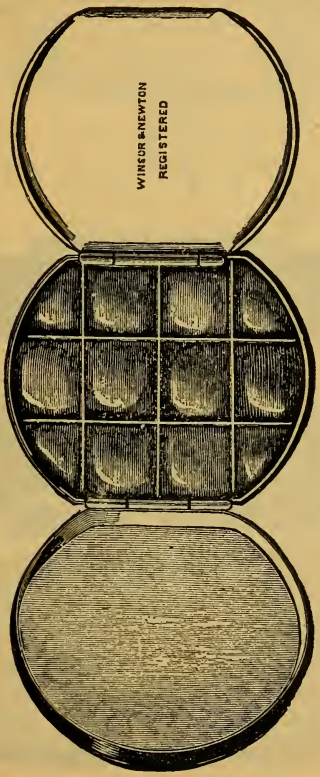


LOCKET BOX. (Size of the Box.)

A neat, light, bijou Box, that can be carried on a watch-guard or chain, and containing six Colors.

No. 31. The "Locket" Box, fitted with 6 Colors, ... $2.00

Winsor & Newton's Porte-Couleur.

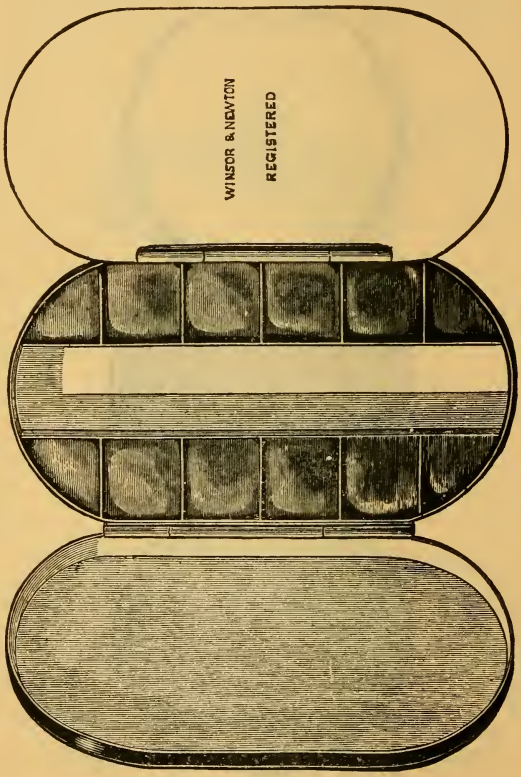


PORTE-COULEUR. (Size of the Box.)

Small and compact for the waistcoat-pocket. Contains twelve Colors.

No. 32. The "Porte-Couleur," fitted with 12 Colors, ... $3.50

Winsor & Newton's Oval-Pocket-Box.



OVAL-POCKET-BOX. (Size of the Box.)

Very convenient for the pocket, both in shape and size. Contains twelve Colors, and has a division for brushes.

No. 33. The "Oval-Pocket-Box," fitted with 12 Colors. $4.50

Winsor & Newton's

Moist Water Colors in Collapsible Tubes.

TUBE OF MOIST WATER COLOR.

No. 33*a*. 25 and 13 CENTS PER TUBE.

Antwerp Blue	Gamboge	Orange Chrome
Bistre	Hooker's Green No. 1	Payne's Grey
Blue Black	Hooker's Green No. 2	Prussian Blue
Brown Ochre	Indian Red	Prussian Green
Brown Pink	Indigo	Raw Sienna
Burnt Roman Ochre	Italian Pink	Raw Umber
Burnt Sienna	Ivory Black	Roman Ochre
Burnt Umber	Lamp Black	Sap Green
Charcoal Grey	Light Red	Terre Verte
Chrome Lemon	Mauve	Vandyke Brown
Chrome Yellow	Naples Yellow	Venetian Red
Cologne Earth	Neutral Tint	Vermilion
Deep Chrome	New Blue	Yellow Lake
Emerald Green	Olive Green	Yellow Ochre

No. 33*b*. 45 and 23 CENTS PER TUBE.

Alizarin Crimson	Leitch's Blue, or Cyanine Blue	Roman Sepia
Brown Madder	Mars Yellow	Ruben's Madder
Crimson Lake	Neutral Orange	Scarlet Lake
Cerulean Blue	Orange Vermilion,	Scarlet Vermilion
Indian Yellow	Purple Lake	Sepia
		Warm Sepia

No. 33*c*. 55 and 28 CENTS PER TUBE.

Cadmium Orange	French Blue	Permanent Mauve
Cadmium Yellow	Green Oxide of Chro'um	Permanent Violet
Cadmium Yellow, Pale	Indian Purple	Ultramarine Ash, Grey
Cobalt Blue	Lemon Yellow	Violet Carmine
Cobalt Green	Mars Orange	Viridian

No. 33*d* 90 and 45 CENTS PER TUBE.

Aureolin	Madder Carmine	Rose Madder (or Madder Lake)
Aurora Yellow	Pink Madder	Scarlet Madder
Burnt Carmine	Primrose Aureolin	Yellow Carmine
Carmine	Purple Madder	
Field's Orange Vermil.		

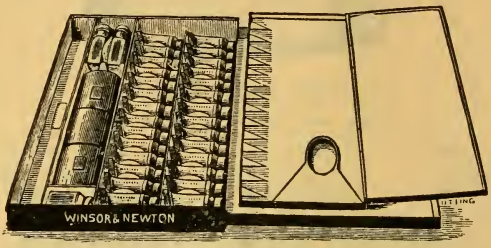
No. 33*e*. $1.40 PER TUBE.

Smalt | Ultramarine Ash

A full stock of Newman's Slow Drying Moist Water Colors in Tubes, also Geo. Rowney's Moist Water Colors in Tubes and Pans, also Bourgeois's Celebrated French Moist Water Colors.

Winsor & Newton's Japanned Tin

Boxes of Moist Water Colors in Collapsible Tubes.



30 MOIST TUBE BOX.

No. 33*f*. 30 Moist Tube Box, containing Gamboge, Aureolin, Indian Yellow, Raw Sienna, Yellow Ochre, Deep Chrome, Orange Chrome, Mars Orange, Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Orange Vermilion, Vermilion, Indian Red, Brown Madder, Purple Lake, Violet Carmine, Cobalt, French Blue, Prussian Blue, Indigo, Emerald Green, Viridian, Olive Green, Brown Pink, Vandyke Brown, Neutral Tint, Sepia and Ivory Black. Also bottles of Chinese White, Indelible Brown Ink, Liquid Ox Gall; and a copper plated Water Bottle, ... $21.65
The same box empty, ... 6.00

24 Moist Tube Box, containing Gamboge, Aureolin, Raw Sienna, Yellow Ochre, Deep Chrome, Mars Orange, Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion, Indian Red, Brown Madder, Purple Lake, Cobalt, French Blue, Prussian Blue, Indigo, Emerald Green, Viridian, Brown Pink, Vandyke Brown, Neutral Tint, and Sepia, ... 15.45
The same box empty, ... 4.50

20 Moist Tube Box, containing Gamboge, Aureolin, Raw Sienna, Yellow Ochre, Deep Chrome, Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion, Indian Red, Brown Madder, Cobalt, French Blue, Indigo, Viridian, Brown Pink, Vandyke Brown, Neutral Tint and Sepia, ... 12.70
The same box empty, ... 4.10

15 Moist Tube Box, containing Gamboge, Aureolin, Raw Sienna, Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Indian Red, Brown Madder, Cobalt, Indigo, Viridian, Brown Pink, Vandyke Brown and Neutral Tint, ... 9.00
The same box empty, ... 3.20

12 Moist Tube Box, containing Gamboge, Raw Sienna, Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Vermilion, Cobalt, Indigo, Brown Pink, Vandyke Brown and Neutral Tint, ... 6.30
The same box empty. 2.70

Dr. Fr. Schoenfeld & Co's

Water Colors in Bottles.

No. 339.

Dr. Schoenfeld's Water Colors have gained a high celebrity in this market for their brilliancy and dependable working qualities; in this respect they are not surpassed by any other make and have besides the recommendation of lowness of price.

The Water Colors in Bottles are especially adapted for large sketches and for paintings on silk.

30 CENTS PER BOTTLE.

Antwerp Blue	Flake White	Permanent Green, deep
Asphalt	Gamboge	Prussian Blue
Bone Brown	Gold Ochre	Permanent Blue
Brown Ochre	Gold Yellow	Persian Red
Brown Pink	Green Lake, light	Red Lead
Burnt Gold Ochre	Green Lake, deep	Raw Sienna
Burnt Umber	Hooker's Green, No. 1	Raw Umber
Burnt Sienna	Hooker's Green, No. 2	Roman Ochre
Burnt Terre Verte	Indian Red	Roman Brown
Brilliant Yellow, light	Ivory Black	Sap Green
Brilliant Yellow, deep	Indigo	Terre Verte
Burnt Lake	Japan Yellow	Ultramarine Yellow
Cappah Brown	Lamp Black	Vandyke Brown
Cassel Earth	Light Red	Venetian Red
Cologne Earth	Mauve	Vermilion, light
Chrome Green	Mineral Blue	Vermilion, Chinese
Caput Mortum	Naples Yellow	Vermilion, light-green
Chrome Yellow, light	Naples Yellow, reddish	Vermilion, yellow-green
Chrome Yellow, medium	Neutral Tint, No. 1	Vermilion, dark-green
Chrome Yellow, deep	Neutral Tint, No. 2	Yellow Ochre, No. 1
Chrome Yellow, orange	New Blue	Yellow Ochre, No. 2
China White, Permanent	Olive Green	Yellow Ultramarine, (Lemon Yellow)
Cremnitz White	Payne's Grey	Zinc White
Dragon's Blood	Permanent Green, light	
Emerald Green	Permanent Green, med.	

45 CENTS PER BOTTLE.

Brown Madder	Indian Yellow	Scarlet Lake
Carmine Lake, II	Mars Yellow	Scarlet Vermilion
Crimson Lake	Mars Orange	Sepia
Celestial Blue	Purple Lake	Sepia, warm

55 CENTS PER BOTTLE.

Cobalt Blue	Violet Carmine	Violet Lake

65 CENTS PER BOTTLE.

Burnt Carmine	Madder Lake, deep	Rose Madder
Cadmium, light	Pink Madder	Ultramarine
Cadmium, deep	Purple	

75 CENTS PER BOTTLE.

Aureolin	Malachite Green	Oxide Chromium, green-blue
Carmine	Oxide Chromium, blue-green	
Emeraude Green		

$1.00 PER BOTTLE.

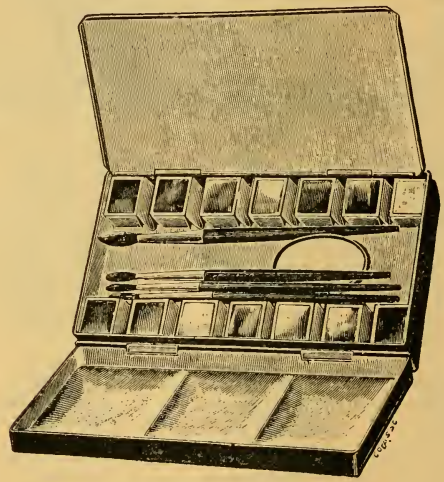
Purple Madder	Smalt	Ultramarine Ash

German Moist Water Colors in Tubes, in stock.

George Rowney's

Thumb-hole Box for Moist Water Colors,

Containing Fourteen One-half Pans of Color and Four Camel Hair Brushes in Tin Ferrules.



The Colors are:

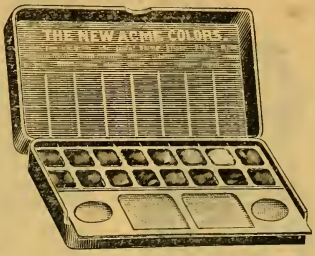
Sepia	Burnt Sienna	Yellow Ochre
Vandyke Brown	Light Red	Gamboge
Sap Green	Crimson Lake	Chrome Yellow, No. 2 and No. 3
Emerald Green	Prussian Blue	
Bottle Green	Fr. Ultramarine Blue	Vermilion

Price, ... $2.00

The Acme Transparent Water Colors

For Coloring and Painting Photo-Portraits on all kinds of Paper, Views Lanterns, Transferotypes, Transparencies, Engravings, Artotypes and Prints of all kinds, Tapestry, Paris Tinting and all kinds of Dye or Fabric Painting, coloring Unmounted Photos for Transferring to Convex, or Plain Glass, Sketching, etc.

In Separate Double Pans, and Boxes.



☞ These colors are in solid, but moist form, and are a substitute for the ordinary fugitive liquid, or dye colors; are easy to apply and very effective, producing all tints, and are the only colors that will make a FAST INDELIBLE BLACK on Albumen Paper for Hair, Drapery, etc., and the Set contains the only colors of this class **GUARANTEED FAST TO LIGHT.**

With a view to greater permanency, many changes have recently been made in the composition of these colors, but still retaining the original names.

TWENTY-TWO TRANSPARENT TINTING COLORS AT 25 CENTS EACH.

Blue, Bright	Gold	Purple
Blue, Dark	Green, Dark	Rose
Blue, Grey	Green, Light	Scarlet
Brown, Dark	Green, Olive	Violet
Brown, Light	Madder Red	Wine
Black, Blue	Neutral Tint	Yellow, Deep
Crimson Carmine,	Orange	Yellow, Lemon
	Flesh	

SIX BODY, OR SURFACE COLORS, 15 CENTS EACH.

Chinese White	Chrome Yellow	Cobalt Blue
Acme Black	Vermilion	Carmine, 35 cents

Large Box, containing Palette and Instructions, and New Rose, Scarlet, Flesh, Gold, New Violet, Deep Blue, Dark Brown, Neutral Tint, Deep Yellow, Dark Green, Blue Grey, Carmine, Blue Black, Brown Madder, Pink Madder, Chinese Opaque White, 16 colors in all, ... $2.50

Amateur Box, containing Palette and Instructions, and Scarlet, Flesh, Dark Brown, Deep Yellow, Dark Blue, and White, $1.00

Acme Medium in Pans, and Instructions, ...35

Acme Guide to Coloring, 50 pages, ...25

Winsor & Newton's

Water Color Mediums, Liquids, Etc.

Bottle of Chinese White.

No. 34.

Chinese White, . . .	per bottle,	.30
Chinese White, same quantity,	per tube,	.30
Artists' prepared Gum Water,	per bottle,	.20
Water Color Megilp, . .	"	.60
Illuminating Body, for Illumination, Missal Painting, etc.,	"	.50
Raising Preparation, for Illumination, Missal Painting, etc ,	"	.50
Water Mat Gold Size, . .	"	.50
White Ink, ...	"	.25

W. & N.'s Liquid India Inks,
Waterproof, all Colors

No. 35

Liquid Indelible Brown Ink,	per bottle,	.30
Liquid Prout's Brown, .	"	.30
Liquid Sepia, . . .	"	.30
Liquid Carmine, made from the finest Orient Carmine, .	"	.30
Liquid India Ink, for Architects Surveyors, etc., . . .	"	.30
Colorless Liquid Ox Gall, .	"	.30
Prepared Ox Gall, in pots, .	"	.17
Prepared Ox Gall, in pots, Large,	"	.30
Asphaltum, ...	"	.30
Gold Ink, ...	"	.30
Silver Ink, ...	"	.30
Prussian Blue, . . .	"	.30
Vermilion	"	.30

Bottle of Liquid Color.

Moist Water Colors in Glass Jars,

With Nickel Plated Screw Cap.

Artists, Decorators, Lithographers, and Designers requiring a larger quantity of FINE WATER COLOR than is contained in the ordinary pans, will find these both convenient and economical.

The amount of color contained in a one-ounce Screw Cap Jar is equal to two dozen half pans.

FLUID OZ.		A	B	C	D
¼ ounce Jars, . .	each,	.30	.40	.50	.75
½ " " . .	"	.50	.75	.90	1.50
1 " " . .	"	.75	1.50	1.75	3.00

Albanine, A Pure Photographic White.

Price, ...30

Process-Black, A Dead Black of Great Density.

Price, ...30

By the use of ALBANINE and PROCESS-BLACK the difficulty hitherto experienced of preserving the true values of the lights, in Drawings made for Process reproduction, is entirely obviated.

Testimonials have been received from many of the leading Process Engravers, witnessing to the value of these new Photographic agents, and Artists may rely upon Drawings in which they been used being reproduced by the camera with absolute fidelity.

Indian Ink.

A.

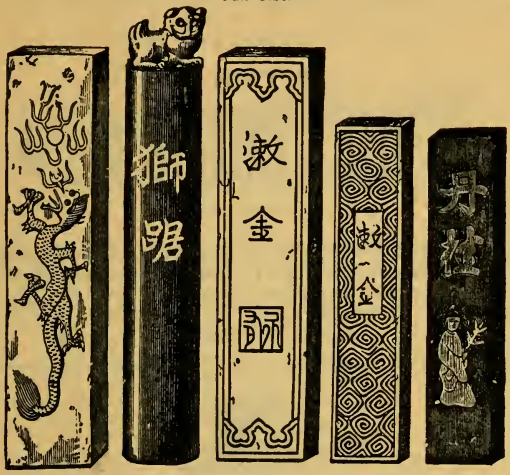
B.

C.

D. SUPER SUPER INDIAN INK.

No. 36.	A.	Pearl, very rich,	per cake,	$3.00
	B.	Half size "Super Super,"	"	1.00
	C.	Black "		2.50
	D.	Winsor & Newton's "Super Super,"	"	2.00
	E.	" " Square Gilt,	"	.50
	F.	" " Oval Lion's Head,	"	.60
	G.	" " Choice Square,	"	.40
	H	" Best, small size,	"	.20

Full Size.



E. F. G. H I.

No. 36.	I.	Winsor & Newton's Good, small size,	per cake,	.15
	K.	Best Imitation Winsor & Newton's "Super Super,"	"	1.50
	L.	Choice Square Gilt, size of E,	"	.35
	M.	Medium quality Lion's Head Gilt,	"	.40
	N.	" " Black,	"	.25
	O.	Small Lion's Head Black,	"	.15
	P.	Ordinary, size I,	"	.10
	Q.	Japan Ink, flat sticks, size A,	"	.50
		Blue, Red, or Yellow,	"	.40

Miscellaneous—Chinese White, &c.

No. 36½.	Rowney's Liquid India Ink,	per bottle,	.30
No. 37.	Roberson's Chinese White,	per bottle,	.45
No. 37½.	E. Woolf & Son's Liquid Chinese India Ink,	per bottle,	.30
No. 38.	Schoenfeld's Chinese White,	per bottle,	.30
	" " "	per tube,	.25
No. 40.	Frost & Adams Co's Liquid India Ink,	per bottle,	.20

2

FROST & ADAMS CO'S CATALOGUE.

SECTION II.

OIL COLORS,

COMPRISING

PREPARED OIL COLORS IN TUBES, FITTED BOXES OF OIL COLORS AND MATERIALS, ARTISTS' PREPARED CANVASS, PREPARED ACADEMY BOARDS AND PAPERS, PREPARED MILLBOARDS AND PANELS, OILS AND VARNISHES.

TRADE MARK.

W. & N.

Winsor & Newton's Finely Prepared

Oil Colors in Collapsible Tubes.

Winsor & Newton have long paid special attention to the production and preparation of their Artists' Oil Colors, which have attained their present high reputation by possessing characteristic qualities, established by every variety of conclusive test.

The Pigments used are of the highest and purest quality. At the "North London Color Works," Winsor & Newton possess every facility and appliance for the production of manufactured colors, and the testing, purifying, &c., of natural ones.

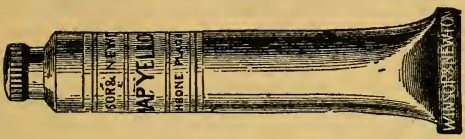
Grinding Artists' Colors by machinery was first commenced by Winsor & Newton in 1840, special apparatus being invented by them for the purpose. Since that period still further improvements have been made; and at present there exists no machinery that for power and precision, combined with great cleanliness in working, can at all compare with that invented and perfected by Winsor & Newton for the grinding of their Artists' Oil Colors.

No mediums or admixtures are used in the preparation of these Colors, which, consequently, keep fresh and pure and ready for use, without reference to time or climate.

Briefly, therefore, it may be mentioned that the best and purest Pigments, most thoroughly ground in unadulterated Oil, form the ingredients of Winsor & Newton's Oil Colors, causing them to take the foremost rank, and to be used most extensively both at home and abroad.

Winsor & Newton's Finely Prepared

Oil Colors in Collapsible Tubes.



NOTE.—Double Tubes are twice the size, Treble three times the size Quadruple four times the size, and Pound eight times the size of the four inch Tube.

White is the only color imported by us in extra sized Tubes, unless expressly to order.

No. 41.	Double Flake, Silver or Cremnitz White, .	per tube,	.14
	Treble Flake, Silver or Cremnitz White, .	"	.21
	Quadruple Flake, Silver or Cremnitz White, .	"	.28
	Pound Flake, Silver or Cremnitz White, .	"	.58

NO. 42. 7 CENTS PER TUBE.

Antwerp Blue
Asphaltum
Bitumen
Black Lead
Blue Black
Bone Brown
Brilliant Yellow
Brown Ochre
Brown Pink
Burnt Roman Ochre
Burnt Sienna
Burnt Umber
Caledonian Brown
Cappah Brown
Cassel Earth
Chinese Blue
Chrome, Deep
Chrome Green
Chrome Green, Deep
Chrome Green, Light
Chrome Green, Middle
Chrome Lemon
Chrome, Orange
Chrome, Red
Chrome, Yellow
Cinnabar Green, Light
Cinnabar Green, Mid.
Cinnabar Green, Deep
Cologne Earth
Copal Megilp
Cork Black
CremnitzWhite
Crimson Lake
Emerald Green
Flake White
Gamboge
Indian Lake
Indian Red
Indigo
Italian Pink
Ivory Black
King's Yellow
Lamp Black
Light Red
Magenta
Mauve
Mauve, No. 2
Medium
Megilp
Monochrome Tint
  Cool, Nos. 1, 2, 3
  Warm, Nos. 1, 2, 3
Mummy
Naples Yellow, Deep
Naples Yellow, Fr. Lt.
Neutral Tint
New Blue
Olive Green
Olive Lake
Orpiment
Oxford Ochre
Payne's Grey
Permanent Blue
Permanent White
Permanent Yellow
Prussian Blue

WINSOR & NEWTON'S OIL COLORS. Continued.

No. 42. *Continued.* 7 Cents Per Tube.

Prussian Brown	Scarlet Lake	Vandyke Brown
Prussian Green	Silver White	Venetian Red
Purple Lake	Sky Blue	Verdigris
Pyne's Megilp	Sugar of Lead	Verona Brown
Raw Sienna	Terre Rosa	Yellow Lake
Raw Umber	Terre Verte	Yellow Ochre
Roman Ochre	Trans. Gold Ochre	Zinc White
Sap Green		

No. 43. 18 Cents Per Tube.

Alizarin Crimson	French Vermilion	Ruben's Madder
Brown Madder	Geranium Lake	Sepia
Burnt Lake	Green Lake, Light	Vermilion, Pale
Cerulean Blue	Green Lake, Deep	Vermilion
Chinese Vermilion	Rembrandt's Madder	

No. 44. 28 Cents Per Tube.

Brilliant Ultramarine	Lemon Yellow, Pale	Oxide of Chromium, Trans.
Carmine No. 2	Madder Lake	Permanent Mauve
Citron Yellow	Malachite Green	Permanent Violet
Cobalt Blue	Mars Brown	Pink Madder
Cobalt Green	Mars Orange	Purple Madder
Ex. Malachite Green	Mars Red	Rose Madder
Extract of Vermilion	Mars Violet	Scarlet Madder
French Ultramarine	Mars Yellow	Scarlet Vermilion
Fr. Veronese Green	Mineral Grey	Strontian Yellow
Indian Yellow	Orange Vermilion,	Viridan
Lemon Yellow, Deep	Oxide of Chromium	

No. 45. 40 Cents Per Tube.

Aureolin	Cadmium Yellow, Pl.	Indian Purple
Burnt Carmine	Carmine	Madder Carmine
Cadmium Orange	Crimson Madder	Orient Yellow
Cadmium Red	Field's Orange Vermil.	Violet Carmine
Cadmium Yellow, Dp.	Green Ultramarine	Yellow Carmine

No. 46. 80 Cents Per Tube.

Aurora Yellow	Primrose Aureolin

No. 46½. $1.40 Per Tube.

Extra Madder Carmine	Extra Purple Madder	Ultramarine Ash

Mussini Finely Prepared Oil Colors.

(Volatile Resin Oil Colors)

Chremnitz, Flake, Silver and Zinc White, quadruple tubes, per tube, .30
Chremnitz and Zinc White, double tubes . . . " .15

7 CENTS PER TUBE.

Antwerp Blue
Asphaltum
Bone Brown
Brilliant Yellow
Brown Ochre
Brown Ochre, Burnt
Brown Red
Burnt Light Ochre
Burnt Sienna
Burnt Umber
Caput Mortuum, Light
Caput Mortuum, Dark
Chrome Yellow, Light
Chrome Yellow, D.med
Chrome Yellow, Or.
Chrome Green. Light
Crimson Lake
Emerald (deck) Green
English (light) Red
Flesh Ochre
Florentine Lake
Gold Ochre
Indian Red, Light
Ivory Black
Lemon Yellow
Naples Red
Naples Yellow, Light
Naples Yellow, Deep
Naples Yellow, Reddish
Permanent Blue
Permanent Green, Dp.
Prussian Blue
Purple Lake
Raw Sienna
Raw Umber
Roman Ochre
Roman Ochre, Burnt
Saturn Red
Terra Puzzuoli (rose earth)
Terre Verte
Terre Verte, Burnt
Vandyke Brown
Verona Green Earth
Yellow Ochre, Light
Yellow Ochre, Dark
Zinnober Green, Light
Zinnober Green, Dark
Zinnober Green, Yellowish

15 CENTS PER TUBE.

Brown Madder
Cerulean Blue
Permanent (Ultram.) Yellow
Scarlet Lake
Vermilion Chinese
Vermilion Scarlet

20 CENTS PER TUBE.

Blue Lake
Cobalt Blue Light
Cobalt Blue, Dark
Cobalt Green, Light
Cobalt Green, Dark
Dutch Pink
Green Lake, Light
Green Lake, Dark
Madder Lake, rose doree
Oxide of Chromium
Oxide of Chromium, Transparent
Pink Madder
Red Ultramarine
Sap Green
Ultramarine Blue, Lt.
Ultramarine Blue, Dk.
Violet Ultramarine

25 CENTS PER TUBE.

Madder Lake, Rose
Madder Lake, Medium
Madder Lake, Violet

30 CENTS PER TUBE.

Burnt Carmine
Cadmium Yellow, Lt.
Cadmium Yellow, Dk.
Capucine Madder
Carmine
Indian Yellow
Madder Lake, Deep
Malachite Green
Olive Green
Vert Emeraude

45 CENTS PER TUBE. Madder Lake, Purple, extra.

Mussini Medium II, slow drying, small . . . per bottle, .25
Mussini Medium II, " extra large . . " .65
Mussini Medium III, quick drying, small . . . " .25
Mussini Medium III, " extra large . . " .65
Mussini Varnish . . . . . " .40

The Tubes are larger than the corresponding numbers of other imported colors.

Tucker & Greene's

Double Flake, Cremnitz, or Silver White . . . per tube, .12
Treble Flake, Cremnitz, or Silver White . . . " .18
Quadruple Flake, Cremnitz, or Silver White . . " .24
Pound Flake, Cremnitz, or Silver White . . . " .48

Le Mesurier

Artists' Colors in Collapsible Tubes.

DOUBLE TUBES, 4 INCH, 10 CENTS PER TUBE.

Antwerp Blue
Asphaltum
Bitumen
Blanc d'Argent
Blue Black
Brown Ochre
Burnt Roman Ochre
Burnt Sienna
Burnt Umber
Caledonian Brown
Chinese Blue
Chrome Yellow, Medium
Chrome Yellow, Deep
Chrome Yellow, Orange
Cologne Earth
Cool Roman Ochre
Copal Megilp
Cork Black
Cremnitz White
Emerald Green
Flake White
Indian Red
Ivory Black
King's Yellow
Lamp Black
Light Red
Megilp
Mummy
Nottingham White
Oxford Ochre
Permanent White
Permanent Yellow
Portland Amber
Prussian Blue
Pyne's Megilp
Raw Sienna
Raw Umber
Roman Ochre
Silver White
Sugar of Lead
Terre Verte
Transparent Golden Ochre
Van Dyke Brown
Venetian Red
Yellow Ochre
Zinc White

SINGLE TUBES, 4 INCH, 10 CENTS PER TUBE.

Black Lead
Bone Brown
Brown Pink
Cappah Brown
Carmine Lake
Chrome Green, Light
Chrome Green, Medium
Chrome Green, Deep
Chrome Red
Crimson Lake
Gamboge
Indian Lake
Indigo
Italian Pink
Jaune Brilliant
Magenta
Mauve.
Munich Lake
Naples Yellow, Light
Naples Yellow, Deep
Neutral Tint
New Blue
Olive Lake
Orpiment
Payne's Gray
Perfect Blue
Perfect Purple
Permanent Blue
Prussian Brown
Prussian Green
Purple Lake
Sap Green
Scarlet Lake
Terra Rosa
Verdigris
Verona Brown
Yellow Lake
Zinnober Green, Light
Zinnober Green, Medium
Zinnober Green, Deep

SINGLE TUBES, 4 INCH, 18 CENTS PER TUBE.

Brown Madder
Burnt Lake
Cerulean Blue
Chinese Vermilion
Citron Yellow
English Vermilion, Pale
English Vermilion, Deep
Geranium Lake
Perfect Yellow
Sepia

SINGLE TUBES, 4 INCH, 28 CENTS PER TUBE.

Cobalt Green
Madder Lake
Malachite Green
Mineral Gray
Orange Vermilion
Oxide of Chromium
Oxide of Chromium, Transparent
Pink Madder
Rose Madder
Strontian Yellow

SINGLE TUBES, 4 INCH, 35 CENTS PER TUBE.

Carmine No. 2
Cobalt Blue
Extract of Vermilion
French Ultramarine Blue
French Veronese Green
Gen. Ultramarine Blue, M. strength.
Indian Yellow, Imitat'n
Lemon Yellow
Lemon Yellow, Pale
Mars Brown
Mars Red
Mars Violet
Mars Yellow
Rembrandt's Madder
Rubens' Madder
Scarlet Vermilion

SINGLE TUBES, 4 INCH, 45 CENTS PER TUBE.

Brilliant Ultramarine Blue	Field's Orange Vermil.	Purple Madder
Extra Malachite Green	French Carmine.	Violet Carmine
	Indian Yellow, Genuine	Viridian

SINGLE TUBES, 4 INCH, 50 CENTS PER TUBE.

Aureolin	Cadmium Yellow, Med.	Madder Carmine
Burnt Carmine	Cadmium Yellow, Orange	Mars Orange
Cadmium Yellow, Pale		

SINGLE TUBES, 4 INCH, 65 CENTS PER TUBE.

Gen. Ultramarine Blue, Full strength	Robert's Lake	Ultramarine Ash

SINGLE TUBES, 4 INCH, 80 CENTS PER TUBE.

Extra Madder Carmine — Extra Purple Madder

All of the above Colors may be had in Double, Quadruple and Octuple Tubes.

NOTICE.—Masury's tubes, with few exceptions, are DOUBLE the size of any now in the market.

Devoe's

Artists' Oil Colors in Tubes.

6 CENTS PER TUBE.

American Vermilion	Chrome Red	Mauve
Antwerp Blue	China White	Magenta
Asphaltum	Chinese Blue	Nap. Yellow, 00—E. P.
Bistre	Cologne Earth	Nap. Yellow, 0,—P.
Bitumen	Cremnitz White	Nap. Yellow, No. 1—L
Blue Black	Crimson Lake	Nap. Yellow, No. 2—M
Bone Brown	Emerald Green	Nap. Yellow, No. 3—D
Brilliant Yellow	Flake White	Neutral Tint
Brown Ochre	French Green	New Blue
Brown Pink	French Naples Yellow	Olive Lake
Burnt Umber	Flesh Ochre	Olive Tint
Burnt Roman Ochre	Gamboge	Orpiment
Burnt Sienna	Gold Ochre	Oxford Ochre
Burnt Terre Verte	Geranium Lake	Paris Blue
Caledonian Brown	Greenish Nap. Yellow	Paris Green
Cappah Brown	Indian Lake	Payne's Gray
Cassel Earth	Indian Red	Permanent Blue
Cork Black	Indigo	Permanent White
Copal Megilp	Italian Pink	Perm. Green, Light
Chrome Green, 1.—L	Ivory Black	Perm. Green, Medium
Chrome Green, 2.—M	King's Yellow	Perm. Green, Deep
Chrome Green, 3.—D	Lamp Black	Persian Red
Chrome Yellow, 1.—L	Light Red	Prussian Blue
Chrome Yellow, 2.—M	Light Raw Sienna	Prussian Brown
Chrome Yellow, 3.—D	Megilp	Prussian Green
*Chrome Orange	Mummy	Purple Lake

Double Size Tubes in stock.

Raw Sienna
Raw Umber
Red Brown
Roman Ochre
Rome's Yellow
Scarlet Lake
Silver White

Sugar of Lead
Trans. Gold Ochre
Terra Rosa
Terre Verte
Vandyke Brown
Venetian Red
Verdigris
Verona Brown

Veronese Green
Yellow Lake
Yellow Ochre
Zinc White
Zinnober Green, L
Zinnober Green, M
Zinnober Green, Deep

12 CENTS PER TUBE.

Blue Verditer
Brown Madder
Burnt Lake
Carnation Lake
Cerulean Blue

Citron Yellow
Chinese Green
Chinese Vermilion
English Vermilion
French Vermilion

Gaude Lake
Green Lake
Imperial Orange
Perfect Yellow
Sepia

20 CENTS PER TUBE.

Cobalt Green
Emeraude Green
Extract of Gamboge
Madder Lake

Madder Lake, Deep
Malachite Green
Oxide of Chromium
Pink Madder

Rose Madder
Strontian Yellow
Trans. Oxide Chrom.

22 CENTS PER TUBE.

Cobalt Blue
Cadmium, Lemon
Cadmium, Pale
Cadmium, Light
Cadmium, Yellow
Cadmium, Deep
Cadmium, Orange

Cadmium, Red
Extract of Vermilion
Lemon Yellow
Mars Brown
Mars Red
Mars Violet
Mars Yellow

Orange Vermilion
Paul Veronese Green
Robert's Lake
Reubens' Madder
Scarlet Vermilion
Ultramarine

32 CENTS PER TUBE.

Antimony Yellow
Capucine Madder

French Carmine
Indian Yellow

Purple Madder
Violet Carmine

40 CENTS PER TUBE.

Burnt Carmine
Madder Carmine

Mars Orange
Scarlet Madder

Ultramarine Ash
Yellow Madder

45 CENTS PER TUBE.

Robert's Lake, No. 1
Robert's Lake, No. 2
Robert's Lake, No. 3

Robert's Lake, No. 4
Robert's Lake, No. 5
Robert's Lake, No. 6

Robert's Lake, No. 7
Robert's Lake, No. 8

14 CENTS PER TUBE.

Double Cremnitz White | Double Flake White | Double Silver White

21 CENTS PER TUBE.

Treble Cremnitz White | Treble Flake White | Treble Silver White

28 CENTS PER TUBE.

Quad'ple Cremnitz White | Quad'ple Flake White | Quad'ple Silver White

Dr. Fr. Schoenfeld & Co.'s

Celebrated German Oil Colors.

10 CENTS EACH.

Antwerp Blue
Asphaltum
Bitumen
Blue Black
Bone Black
Bone Brown
Brown Ochre
Brown Pink
Brown Red
Burnt Brown Ochre
Burnt Dark Ochre
Burnt Gold Ochre
Burnt Roman Ochre
Burnt Yellow Ochre
Burnt Sienna
Burnt Sienna, No. 2, deep
Burnt Terre Verte
Burnt Umber
Brilliant Yellow, deep
Brilliant Yellow, light
Caledonian Brown
Cappah Brown
Caput Mortum, deep
Caput Mortum, light
Cassel Earth
Chrome Green, No. 1
Chrome Green, No. 2
Chrome Yellow, deep
Chrome Yellow, light
Chrome Yellow, medium
Chrome Yellow, orange
Cologne Earth
Cork Black
Cremnitz White
Crimson Lake
Dark English Red
Dark Ochre
Flesh Ochre
Gold Ochre
Half Burnt Light Ochre
Indian Red, dark
Indian Red, light
Indigo
Ivory Black
Lamp Black
Light Red
Light English Red
Massicot (Yellow)
Maugau Brown
Mineral Blue
Mineral Green
Mineral Yellow
Morellen Salt (Red)
Mummy
Munich Lake
Naples Red
Naples Yellow, deep
Naples Yellow, light
Naples Yellow, greenish
Naples Yellow, reddish
New Blue
Rue Ochre
Permanent Blue
Permanent Green, deep
Permanent Green, light
Permanent Green, medium
Persian Red
Prussian Blue
Prussian Brown
Raw Sienna
Raw Umber
Red Oxide of Iron
Roman Brown
Roman Ochre
Satinober
Scarlet Lake
Schuttgelb
Silver White
Terre Verte
Terre Verte, Veronese
Turkey Red
Vandyke Brown
Velvet Black
Venetian Red
Verdigris
Zinnober, Dunkel
Zinnober, Gelb
Zinnober, Hellgruner
Yellow Ochre, No. 1
Yellow Ochre, No. 2
Yellow of Gold
Zinc Yellow
Zinc White

25 CENTS EACH.

Brussels Brown
Cobalt Blue, light
Japan Red
Japan Yellow
Lemon Yellow
Pigment
Saturn Red
Sepia
Ultramarine, light
Ultramarine, Yellow
Vienna Red

30 CENTS EACH.

Azure Blue
Brown Pink, dark
Brown Pink, greenish
Celestial Blue
Chinese Vermilion
Cobalt Blue, deep
Cobalt, deep
Green Lake, deep
Green Lake, light
Kronberg's Green
Madder Brown
Madder Lake, No. 1
Madder Lake, No. 2 (rose)
Madder Lake, No. 3 (deep rose)
Madder Lake, No. 4 (pink)
Madder Lake, No. 5
Mars Orange
Mars Yellow
Patent Vermilion, deep
Robert Lake, No. 1
Robert Lake, No. 2
Robert Lake, No. 3
Robert Lake, No. 4
Scarlet Vermilion
Ultramarine Blue, deep
Ultramarine Green
Venetian White, double
Vermilion, light (carmine)
Whites, double size

40 CENTS EACH.

Cadmium (lemon), No. 1
Cadmium, No. 2
Cadmium, No. 3
Cadmium, No. 4
Cadmium, No. 5
Cadmium, red
Turkish Blue
Vandyke Red
Violet Lake
Whites, triple size

45 CENTS EACH.

Indian Yellow
Madder Lake, No. 6, deep

50 CENTS EACH.

Carmine
Carmine, burnt
Emeraude Green
Madder, No. 7
Madder, No. 8
Madder, Carmine
Madder Lake, burnt (Purple Madder)
Malachite Green
Mauve
Violet Carmine
Oxide of Chromium, blue-green
Oxide of Chromium, green-blue

75 CENTS EACH. Ultramarine Ash

Edouard's Celebrated French Oil Colors in Tubes.

Extra large size Tubes Nos. 8 and 10, or quadruple size, at proportional prices. All desirable colors in the large size tubes are kept in stock.

15 CENTS EACH.

Blanc d'argent
Blanc de plomb
Blanc de Zinc
Bitume
Brun d'os
Brun rouge
Brun Van Dyke
Bleu de Berlin (ou Prusse)
Bleu mineral
Bistre
Cinabre vert clair
Cinabre vert fonce
Jaune de Naples clair
Jaune de Naples
Jaune brilliant
Jaune de Rome
Jaune deChrome fonce
Jaune de Chrome clair
Laque jaune de Gaude
Laque ordinaire
Momie
Massicot
Noir d'Ivorie
Noir de peche
Noir de Liege
Ocre jaune
Ocre jaune de Rome
Ocre de Cormayeux
Ocre rouge
Ocre de Rue
Ocre d'or
Ocre d'or brulee
Ocre brune
Rouge Van Dyck
Rouge de Venise
Terre de Sienne nat
Terre de Sienne brulee
Terre d'Italie nat
Terre d'Italie brulee
Terre de Cologne
Terre de Cassel
Terre d'Ombre nat
Terre d'Ombre brulee
Terre verte de Verone
Terre verte brulee
Vert Anglais Nos. 1 2 3
Vert Paul Veronese
Vert mineral
Vert de Scheele

20 CENTS EACH.

Indigo
Noir de Bougie
Rouge de Pouzzole
Rouge indien
Noir de Husso Negro

30 CENTS EACH.

Brun de Fer ou Laque de Fer
Brun de Brussels
Jaune de zinc ou citron
Jaune de Strontiane
Laque Robert 5 6 7 8
Orange de Mars
Rouge de Mars
Still de grain brun Anglais
Vert oxyde de Chrome

35 CENTS EACH.

Brun de Florence
Jaune de Mars
Laque fine carminee
Laque brulee
Laq. orangee de Rome
Vermillon Francais

50 CENTS EACH.

Brun de Madere
Gris de Fusian
Jaune d'Antimoine
Jaune Pinast 1 2 3
Laque de garance Rose doree
Laque de garance capucine
Laque de garance brun jaune
Laque de garance brun fonce
Laque Anglaise
Outremer Guimet 1
Outremer Jaune
Outremer Verte
Vermillon 1
Vermillon Anglais
Vermillon de Chine
Violet de Mars

65 CENTS EACH.

Bleu de Cobalt
Bleu de Cobalt celeste
Bleu de Cobalt de Dresde
Laque de garance 1
Juan de Indien
Vert emeraude

75 CENTS EACH.

Carmine de garance
Carmine de garance superfine
Laque de garance pourpre
Outre Guimet extra fine
Vert de Cobalt
Vert de Cobalt clair
Vert de Malachite

$1.25 EACH.

Jaune de Cadmium fonce
Juan de Cadmium clair
Juan de Cadmium citron
Juan de Cadmium citron pale
Cendre d'Outremer lapis 1
Violet de Cobalt

$18.75 EACH. Outremer lapis

Lacroix Vitrifiable Colors, in Tubes,

For China Painting.

RELIEF WHITE.

Relief white,	.22

BLACKS.

Raven Black,	.22
Ivory Black,	.18
Brunswick Black,	.45

BLUES.

Two Fire Blue,	.22
Dark Blue,	.18
Common Blue,	.18
Deep Blue,	.22
Deep Ultramarine,	.30
Light Sky Blue,	.22
Sky Blue,	.22
Victoria Blue,	.18
Old Blue,	.18
Delft Blue.	.18
Blue No. 29,	.18
Air Blue,	.25

BROWNS.

Black Brown,	.22
Chestnut Brown,	.22
Otter Brown,	.22
Van Dyke Brown,	.22
Gillflower Brown,	.22
Brown No. 3,	.22
Brown No. 4 or 17,	.22
Brown M or 108,	.22
Dark Brown,	.22
Deep Red Brown,	.22
Light Brown,	.22
Sepia,	.22
Yellow Brown,	.22

CARMINES.

Light Carmine A,	.22
Light Carmine No. 1,	.22
Carmine No. 2,	.25
Deep Carmine No. 3,	.30

CARNATIONS.

Carnation No. 1,	.22
Carnation No. 2,	.22
Carnation, deep,	.22

FLUX.

Flux,	.18

GREENS.

Grass Green No. 5,	.22
Brown Green No. 6,	.22
Dark Green No. 7,	.22
Green No. 36 T,	.22
Apple Green,	.18
Deep Blue Green,	.30
Chrome-Green 3 B,	.22
Deep Chrome-Green,	·22
Deep Green,	.22
Emerald-Stone Green,	.22
Sap Green,	.22
Bronze Green,	.30
Duck Green,	.30
Moss Green V,	.22
Moss Green J., Yellowish,	.22
Night Green,	.30
Olive Green,	.22
Coalport Green, Light,	.25
Coalport Green, Dark,	.25

GREYS.

Grey No. 1, Light,	.22
Grey No. 2,	.22
Pearl Grey No. 6,	.22
Neutral Grey,	.22
Warm Grey,	.22
Grey Flesh,	.25

OCHRES.

Dark Ochre,	.22
Yellow Ochre,	.22

PURPLES.

Purple No. 2,	.45
Crimson Lake,	.37
Crimson Purple,	.65
Deep Purple,	.55
Ruby Purple,	.75

REDS.

Capucine Red,	.22
Laky Red,	25
Orange Red,	.25
Bright Red,	.25
Flame Red,	.25
Bengal Rose,	.22
Japan Rose,	.30
Chinese Rose,	.22

RELIEF.

Relief, for Gold	.18

VIOLETS.

Deep Violet of Gold,	.45
Light Violet of Gold,	.37
Violet of Iron,	.22
Grey Violet of Iron,	.32

WHITES.

Chinese White,	.22
Permanent White,	.18

YELLOWS.

Ivory Yellow,	.22
Jonquil Yellow,	18
Yellow for mixing,	.18
Orange Yellow,	.18
Permanent Yellow,	.18
Silver Yellow,	.18
Albert Yellow,	.37
Egg Yellow,	.30

GROUNDING COLORS.

Celestial Blue,	.25
Indian Blue,	.30
Lavender Blue,	.18
Marine Blue,	.30
Reddish Brown,	.22
Shammy Brown,	.18
Carmelite,	.18
Celadon,	.22
Light Coffee,	.18
Chro'm Water-Green,	.18
Copper Water-Green,	.18
Grounding Green,	.22
Steel Grey,	.22
Turtle-dove Grey,	.22
Isabella,	.18
Fusible Lilac,	.22
Maize,	.22
Mauve,	.37
Coral Red,	.18
Rose Pompadour,	.37
Salmon,	.22
Turquoise Blue,	.30
Turquoise Green,	.30
Chinese Yellow,	.18
Gold Bud,	.22
Very Fusible Rose,	.22

THE FOLLOWING COLORS ARE IN PREPARATION.

Relief White, Canary Yellow, Shading Green, Blue Green light and dark, Rose, Pomp. Red, Grey Flowers, Outlining Black, Sevres Blue, Superior English Pink, Maroon, Pansy, Peach Blossom, Rose Leaf Green, Royal Copenhagen Green, Old Holland Blue, Dabary Pink, Best Orange.

Special Overglaze Powder Colors (High Glaze),

For Painting on China and Earthenware. Put up in Vials.

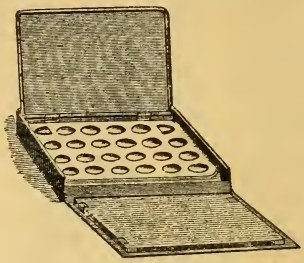
BLACKS.	Per vial
Outlining Black	.25
Superfine French Black	.25
BLUES.	
Baravian Blue	.25
Celestial Air Blue	.30
Deep Sky Blue	.20
Delft Blue, very dark	.30
Ethereal Blue, light	.25
Imperial Blue	.40
Old Blue	.30
Persian Outremer	.35
Robbin's Egg Blue	.30
Royal Blue	.30
Sevres Blue	.25
BROWNS.	
Antique Brown	.20
Brown No. 39	.25
Cafe au lait	.25
Dixon's Brown	.20
Evans' Brown for Flower Painting	.20
Hair Brown	.25
Meissen Brown	.20
Neutral Brown	.20
Oak Brown	.20
Orange Brown, dark	.25
Orange Brown, light	.20
Pompadour Brown	.20
Shammy	.20
Strong Chestnut Brown	.25
FLUXES.	
Flux	.10
Special Soft Flux	.20
GREENS.	
Berlin Green	.25
Best Blue Green	.25
Celeste, greenish	.25
Coalport Green	.25
Dark Bronze Green	.25
Delft Green	.25
Malachite Green	.35
Meissen Green	.25
Moss Green	.25
Nile Green	.25
Olive Green No. 36	.25
Russian Green	.25
Sap Green, dark	.25
Sap Green, light	.25
Sea Green, dark	.25
Sea Green, light	.20
Turquois Green, superior	.30
Yellow Moss Green	.25

GREYS.	Per vial
Copenhagen Grey	.25
Grey for Flower Painting	.25
Mouse Grey	.25
Silver Grey	.25
Superior Gold Grey	.25
PINKS AND CARMINES.	
Berlin Pink	.35
Berlin Rose	.35
Deep Carmine	.25
English Pink	.30
English Rose	.30
Old Rose	.30
Pale Carmine	.20
Pink for Grounds	.30
Rose Du Barry	.40
Sevres Rose	.30
Yellow Carmine	.25
PURPLES AND VIOLETS.	
English Maroon	.75
Golden Lilac	.30
Golden Violet	.50
Royal Purple	.60
Ruby Purple	.75
REDS.	
Beef Blood (or Ox Blood)	.30
Carnation No. 60	.25
Flame Red	.20
Flesh Tint	.25
Ruby Red	.30
WHITE ENAMELS.	
Best English White Enamel	.25
Hard White Enamel	.25
Relief white (Aufsetzweiss)	.20
White Enamel No. 1 (medium hard)	.15
White Enamel No. 2 (soft)	.15
YELLOWS.	
Amber Yellow	.20
Buff	.25
Canary Yellow	.20
Citron Yellow	.20
Delft Yellow	.25
Egg Yellow	.15
Genuine Albert's Yellow	.20
Glazed Doulton Tint	.20
Golden Yellow	.20
Golden Rod Yellow	.20
Mason's Best Orange	.20
Trenton Ivory	.25

Set of three Sample Plates, showing the above colors fired, per set $7.50

Large bottles, containing as much as six vials, at five times the vial price.
Extra large bottles, coutaining as much as twelve vials, at ten temes the vial price.

China Palette for Painting on China.



No. 52. Size, 6 in. by 4, with 24 small recesses for holding colors, enclosed in Japanned Tin Case, with Protector Flap and Glass Slab, very useful for keeping the colors clean, ... $2.50
The Palette only, ... 1.50
Palette, with 18 recesses and slant, with Cover, ...90

Lacroix's Colors in Boxes.

No. 53. Wooden Box, containing 18 Colors, Brushes, Palette Knife, etc., . $7.00
Wooden Lock-Box, containing 18 small and 9 large Tubes of Colors, Brushes, Palette Knife, Scraper, etc., ... 13.00
Japanned Tin Box, containing 20 Colors, Brushes, Palette Knife, etc., ... 9.00
Japanned Tin Box, containing 28 Colors, Brushes, Palette Knife, etc., ... 10.50

Oils for Lacroix's Colors.

No. 54. Oil of Turpentine, ... per bottle, .35
Oil of Lavender, ... " .35
Oil of Cloves, ... " 1.00
Fat Oil, of Turpentine and Lavender, ... " .35 and .75
Tinting Oil, ... " .25

Sundries.

No. 54½. Tried by Fire, with colored plates, by Mrs. Franckleton, ... $6 00
No. 55. Hand-Book on China Painting, by M. Louise McLaughlin, . .75
No. 55½. Hand-Book on Pottery Painting, by M. Louise McLaughlin, . $1.00
No. 55¾. Suggestions to China Painting, ... $1.00
No. 56. Hand-Book on China Painting, by John C. L. Sparks, . . .45
No. 56¼. China Painting, by Florence Lewis, with 16 colored plates, $2.50
No. 56½. A Guide to Porcelain Painting, by S. T. Whitford, . . . $1.00
No. 56¾. Hints for China and Tile Decorators, ...50

Suitable Brushes, for Tile Painting, in great variety. See Section 3.
Prepared Gold, for Tile Painting. Tiles, for China Painting. See Section 8.

Bischoff's Select Vitrifiable Colors for China,

In Tubes, or Dry in Powder, in Paper Packages.

IN TUBES.

	Each.	Per Doz.		Each.	Per Doz.
Albert's Yellow,	.50	6.00	Flesh I,	.35	4.20
Yellow Brown,	.30	3.60	Gold Grey,	.40	4.80
Ivory Yellow,	.30	3.60	Pompadour,	.30	3.60
Peach Blossom,	.40	4.80	Carnation,	.30	3.60
Violet,	.50	6.00	Orange,	.30	3.60
Carmine-Flesh,	.40	4.80	Sevres Blue,	.40	4.80
Rose,	.60	7.20	Russian Green,	.40	4.80
Ruby Purple,	.80	9.60	Brown Green,	.30	3.60
Black,	.35	4.20	Moss Green,	.30	3.60
Pansy (dark,)	.50	6.00	White Rose,	.30	3.60
Royal Copenhagen,	.50	6.00			

HINTS.—Mix colors with a little "BALSAM COP." to proper consistence. Tube colors should be kept away from the heat. To prevent colors from making a deposit, do not lay them back in the box on the same side. These colors need not be fluxed extra; a perfect fire will give them a perfect glaze.

DRY, IN POWDER, PAPER PACKAGES.

(Sent to any address by mail, postpaid, on receipt of full amount.)

Carmine Flesh,	.30	Albert's Yellow,	.30
Rose,	.20	Black,	.30
Rose (same ground,)	.35	Russia Green,	.20
Violet,	.35	Warm Grey (Figures),	.25
Sevres Blue,	.20	Yellow Brown,	.20
Pomdadour,	.20	Peach Blossom,	.25
Blood-Red (Meissen),	.30	Gold Grey,	.20
Olive Green (soft tint),	.20	Ivory Yellow,	.20
Brown Green,	.20	Orange,	.20
Moss Green,	.20	Carnation,	.20
Ruby Purple,	.50	Flesh I,	.25
Royal Copenhagen,	.35	Pansy (dark,)	.35
White Rose,	.25		

Opaque Colors.

MATT. DRY, IN POWDER.

Ivory I,	.20	Ivory Wax,	.20
Ivory II,	.20	Old Ivory,	.20
Robin's Egg Blue,	.20	Isabella,	.20
Peach,	.20	Yellow Green,	.20
Bronze Green,	.20	Grey, Matt,	.20
Bronze Brown,	.20	Paste, Raised Gold,	.20

HINTS HOW TO USE BISCHOFF'S COLORS IN POWDER.

Various oils and mediums are used for mixing powder colors. Take a small portion of Dry Color, add little "Balsam Cop." or Fall Oil of Turpentine, with little Lavender, and mix well with pallet knife or small muller, to same consistence as tube colors (thick paste.) Balsam Cop. has the advantage and possesses a more agreeable odor than fat oils, or none at all, and keeps color open for several days. Colors are perfectly ground and fluxed.

Fine Reliable Enamels.

DRY, IN POWDER.

White Enamel, per package,	.20
Turquoise Enamel, per package,	.20

Enamel should be mixed with Turpentine (use horn pallet knife), and as little "Oil of Tar" as possible. Stands successive firing.

Gold, Bronzes, Etc., for China.

Cooley's Roman Gold, small box,	$1.00
" " large box	3.00
" " glass jar, large quantity,	3.00
" " glass jar, extra large,	5.00
" Green Gold, small box,	1.00
" Red " "	1.00
" Brown No. 6 Gold Bronze, small box,	1.00
" " 8 " "	1.00
" Best Liquid Gold, per bottle,	.75
Paste for Raised Gold,	.30
Royal Worcester Cream Tint (semi-opaque),	.25
" Dead White,	.25
Best White Enamel,	.25
Best Colored Enamel,	.30
Walters' Roman Gold, per box,	1.00
" Light Green Gold, per box,	1.00
" Red " "	1.00
" Brown, " "	1.00
Royal Worcester Glass Ivory,	.25
Marsching's Liquid Bright Gold, per bottle,	.75
Lawton's Roman Gold, small box,	1.00
Hibbard's " "	1.00
Essence of Gold, for China,	.25

Glass Brushes.

1.	Double, 8 inches long, ½ inch diameter,	.25
2.	" 8 " ¾ "	.50
3.	" 8 " 1 "	.75

Gold Paint.

Baby,	.20
Dent's,	.25
Small Marsching's,	.25
Large "	.50
Meir's small,	.25
" large,	.50
Favorite, small,	.25
" large,	.50
" silver,	.25
Williams' Liquid Gold,	1.00
Favorite Liquid Gold,	.50
Japanese Liquid Gold,	.50
Japanese "	.25
Royal Gold, Ruby's,	.50
" Silver, "	.50
" Bronze, "	.50
Platenore Gilding,	.25
California,	.25
Climax,	.25
Oriental,	.25
Eagle Liquid Gold,	.25
Vulcan,	.15

Golden Gloss. A Liquid Gold Enamel.

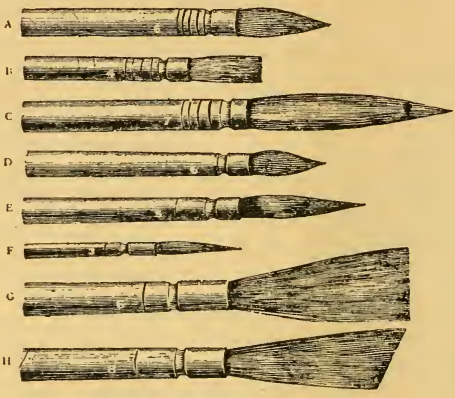
Small size,	.25	Half Pints,	1.00
Large "	.50	Pints,	1.50

Frost & Adams Co's Bristle Water Color Brushes, Ebony Handles, in Albata Ferrules.

1-2-3,	.17	9,	.50
4,	.23	10,	.55
5-6,	.28	11,	.65
7,	.33	12,	.70
8,	.38		

BRUSHES FOR CHINA PAINTING.

Superfine Camel's Hair. In Quills.



A — POINTED SHADERS.

No. 1	each,	$ .05	No. 5	each,	$ .09
2	"	.06	6	"	.10
3	"	.07	7	"	.11
4	"	.08	8	"	.12

B — SQUARE SHADERS.

No. 1	each,	$ .05	No. 5	each,	$ .09
2	"	.06	6	"	.10
3	"	.07	7	"	.11
4	"	.08	8	"	.12

C — TRACERS.

No. 1	each,	$ .05	No. 5	each,	$ .09
2	"	.06	6	"	.10
3	"	.07	7	"	.11
4	"	.08	8	"	.12

D—SHORT PAINTING BRUSHES.

No. 1	each,	$ .05	No. 5	each,	$ .09
2	"	.06	6	"	.10
3	"	.07	7	"	.11
4	"	.08	8	"	.12

E—LONG PAINTING BRUSHES.

No. 1	each,	$ .05	No. 5	each,	$ .09
2	"	.06	6	"	.10
3	"	.07	7	"	.11
4	"	.08	8	"	.12

F—MINIATURE PAINTING BRUSHES.

No. 00	each,	$ .05	No. 2	each,	$ .08
0	"	.06	3	"	.09
1	"	.07	4	"	.10

G—SQUARE LINERS.

No. 1	each,	$ .05	No. 5	each,	$ .09
2	"	.06	6	"	.10
3	"	.07	7	"	.11
4	"	.08	8	"	.12

H—CUT LINERS.

No. 1	each,	$ .05	No. 5	each,	$ .09
2	"	.06	6	"	.10
3	"	.07	7	"	.11
4	"	.08	8	"	.12

Genuine Fitch Hair Stipples or Dabbers.

Wire Bound Quills. For Blending.

No. 1	each,	$ .08	No. 5	each,	$ .12
2	"	.09	6	"	.13
3	"	.10	7	"	.14
4	"	.11	8	"	.15

Camel's Hair Brushes.

For Grounding.

Flat, ⅜ inch wide,	each,	$ .12
" ⅝ "	"	.18
" ⅜ " Goodyear style,	"	.15

Red Sable Liners or Riggers,

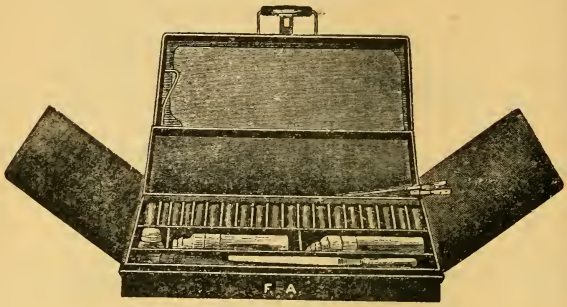
In Short Black Handles. For China Painting.

No. 1	each,	$ .15	No. 3	each,	$ .20
2	"	.17			

Japanned Tin

Sketching Boxes of Oil Colors and Materials.

Fitted Complete to order.



JAPANNED TIN SKETCH BOX WITH FITTINGS.

No. 57.

The prices of these Boxes vary, according to the Fittings, from $8.00 to $15.00, and upwards

Pupil's Complete Sketch Box.

No. 57½. Japanned Box, 3¾ × 8, Palette to fit box, 12 Colors, 4 Brushes, 1 Palette Knife, ... $ 3.00

For Empty Japanned Tin Sketching Boxes, see "JAPANNED WARE," Section 6.

Winsor & Newton's

Artists' Prepared Canvas.

The finest and best British made Canvas of Pure Flax, and the purest color and materials only, are used by Winsor & Newton in the production of their Artists' Prepared Canvas.

The superior method of manufacture adopted by Winsor & Newton materially enhances the quality of their Artists' Canvas. It is dried naturally and without the aid of artificial means; and the adhesion of the surface of preparation to the ground of raw Canvas is so intimate and thorough, as to preclude the possibility of its peeling up or becoming detached in any way.

Winsor & Newton's Artists' Prepared Canvas is firm, solid and strong; will bear rolling; and is warranted to keep any length of time, and in any climate without cracking.

Winsor & Newton's

Prepared Canvas for Oil Painting.

In Rolls of Six Yards.

No. 58.			Smooth or Roman.	Twilled.
27 inches wide,	. . .	per yard,	$1.16	$1.40
30 "	. . .	"	1.25	1.60
36 "	. . .	"	1.40	1.80
38 "	. . .	"	1.55	2.00
42 "	. . .	"	1.68	2.25
45 "	. . .	"	2.10	2.55
54 "	. . .	"	2.75	3.30
62 "	. . .	"	3.25	3.50
74 "	. . .	per roll,	23.50	32.00
86 "	. . .	"	27.00	33.00

Singe Prime and Absorbent Canvas same price as Smooth. Hessian same price as Roman. Extra Widths imported to order.

Winsor & Newton's Student's Canvas.

Per Roll of Six Yards.

28 inches,	$2.50	37 inches,	$3.15	43 inches,	$3.95
32 "	2.75	39 "	3.55		

Winsor & Newton's British Canvas.

Per Roll of Six Yards.

27 inches,	$4.50	42 inches,	$6.80	62 inches,	$13.00
30 "	4.85	45 "	7.50	74 "	16.50
36 "	5.80	54 "	11.00		

French Canvas.

No. 59.	1 meter (40 inches) wide,	Fine, . . .	per yard,	$3 00
	1 " " "	Ordinary, .	"	1.50
	1 " " "	Best Ordinary,	"	1.80
	2 " (80 inches) "	Fine Twilled,	"	7.00
	2 " " "	Heavy Twilled,	"	7.00
	2 " " "	Best Ordinary,	"	4.00

Frost & Adams Co's Best American Canvas.

No. 60.

27 inches wide,	per yard		$1.00	54 inches wide,	per yard,		$2.55
30 "	"		1.10	62 "	"		2.75
36 "	"		1.20	74 "	"		3.50
42 "	"		1.35	96 "	"		5.00
45 "	"		1.50	120 "	"		7.00

Frost & Adams Co's
Best American Sketching Canvas.

In Six Yard Rolls.

No. 3 Twilled Sketching Canvas.

28 inches wide,	per roll,		$3.45	36 inches wide,	per roll,		$4.15
30 "	"		3.85				

No. 4 Plain Sketching Canvas.

27 inches wide,	per roll,		$2.70	34 inches wide,	per roll,		$3.25
30 "	"		2.95	36 "	"		3.55

White Back Single Prime.

36 inches wide,	per roll,		$2.50	38 inches wide,	per roll,		$2.70

Pastel Canvas.

Linen, 30 inches wide,	. . . . .	per yard,	$1.50
" 36 "	. . . . .	"	1.75
Cotton, 50 "	. . . . .	"	2.50

Canvas Pliers, for Stretching Canvas.

No. 1,	. .	1.75	No. 2,	. .	2.00	No. 3,	. . 2.25

Square Stretchers, Without Canvas.

No. 63. Sizes like the above Stretched Canvases, ranging from

6 × 8 to 18 × 24	each,		.20	30 × 44 to 36 × 44	each,		.60
18 × 26 to 22 × 30	"		.25	40 × 50	"		.75
25 × 30 to 24 × 36	"		.30	40 × 54	"		.80
27 × 34 to 29 × 36	"		.40	34 × 60	"		.80
26 × 42 to 30 × 40	"		.45				

Bars will be supplied, or Odd Sized Stretchers made, at an additional cost, and at short notice.

Winsor & Newton's

Prepared Canvas on Stretchers.

	Smooth or Roman.	Twilled.
6 × 8 inches,	.35	.45
6 × 9 "	.35	.45
6 × 10 "	.35	.45
6 × 12 "	.35	.45
6 × 18 "	.50	.60
7 × 9 "	.35	.45
7 × 10 "	.35	.45
7 × 11 "	.35	.45
7 × 12 "	.35	.45
8 × 10 "	.35	.45
8 × 12 "	.35	.45
8 × 16 "	.50	.60
8 × 18 "	.55	.65
8 × 20 "	.65	.75
9 × 11 "	.35	.45
9 × 12 "	.35	.45
9 × 13 "	.40	.50
9 × 14 "	.42	.55
9 × 15 "	.50	.60
9 × 17 "	.55	.75
9 × 20 "	.65	.80
10 × 12 "	.40	.55
10 × 14 "	.45	.60
10 × 15 "	.50	.60
10 × 16 "	.50	.60
10 × 18 "	.60	.75
10 × 20 "	.70	.85
10 × 22 "	.75	.95
10 × 24 "	.80	.95
11 × 15 "	.55	.70
12 × 14 "	.55	.70
12 × 15 "	.60	.75
12 × 16 "	.60	.75
12 × 17 "	.65	.80
12 × 18 "	.65	.90
12 × 20 "	.70	.90
12 × 24 "	.85	1.05
12 × 30 "	1.00	1.25
12 × 36 "	1.25	1.65
14 × 16 "	.70	.90
14 × 17 "	.70	.95
14 × 18 "	.75	.95
14 × 20 "	.75	1.00
14 × 22 "	.75	1.00
14 × 24 "	.85	1.10
14 × 40 "	1.70	2.30
14 × 50 "	2.00	2.60
14 × 60 "	2.55	3.40

	Smooth or Roman.	Twilled.
15 × 18 inches,	.75	.95
15 × 27 "	1.05	1.20
15 × 30 "	1.15	1.40
16 × 18 "	.80	1.10
16 × 20 "	.85	1.10
16 × 22 "	.85	1.10
16 × 24 "	.90	1.15
16 × 26 "	1.00	1.25
16 × 42 "	2.25	2.65
16 × 50 "	2.45	2.85
16 × 60 "	2.60	3.00
17 × 21 "	.95	1.15
17 × 25 "	1.05	1.25
18 × 22 "	1.05	1.25
18 × 24 "	1.05	1.25
18 × 26 "	1.05	1.35
18 × 30 "	1.10	1.40
18 × 40 "	1.80	2.50
18 × 48 "	2.40	2.90
18 × 50 "	2.40	2.90
18 × 60 "	2.75	3.15
20 × 24 "	1.15	1.45
20 × 27 "	1.20	1.45
20 × 30 "	1.30	1.60
22 × 27 "	1.25	1.65
22 × 30 "	1.35	1.70
22 × 36 "	1.55	2.00
24 × 30 "	1.40	1.85
24 × 34 "	1.55	2.00
24 × 36 "	1.80	2.25
25 × 30 "	1.40	1.90
26 × 36 "	1.70	2.30
26 × 42 "	2.20	2.75
27 × 34 "	1.65	2.20
28 × 48 "	2.75	3.60
29 × 36 "	1.75	2.50
30 × 40 "	2.70	3.15
30 × 42 "	2.75	3.25
30 × 44 "	2.85	3.50
30 × 50 "	3.10	4.00
34 × 42 "	2.80	3.50
34 × 44 "	2.95	3.65
34 × 60 "	4.00	5.00
36 × 42 "	2.80	3.65
36 × 50 "	3.50	4.25
36 × 60 "	4.20	5.25
40 × 50 "	3.80	4.75
40 × 54 "	3.90	5.00

NOTE.— French Canvas of the above sizes stretched to order at short notice in the most workmanlike manner. Ordinary French Canvas same price as Winsor & Newton's Smooth. Best Ordinary, and Fine French higher than Winsor & Newton's Smooth. Paintings on Canvas cut down and re-stretched by experienced workmen.

Special and irregular sizes made and stretched to order of French, German and American Canvas.

Frost & Adams Co's

American Prepared Canvas on Stretchers.

	Each.		Each.
6 × 8 inches,	.32	15 × 18 inches,	.68
6 × 9 "	.32	15 × 27 "	.95
6 × 10 "	.32	16 × 20 "	.76
6 × 12 "	.32	16 × 22 "	.76
6 × 18 "	.45	16 × 24 "	.85
7 × 9 "	.32	16 × 26 "	.90
7 × 10 "	.32	16 × 42 "	2.00
7 × 11 "	.32	16 × 50 "	2.20
7 × 12 "	.32	16 × 60 "	2.35
8 × 10 "	.32	17 × 21 "	.85
8 × 12 "	32	17 × 25 "	.95
8 × 16 "	.45	18 × 22 "	.95
8 × 18 "	.50	18 × 24 "	.95
8 × 20 "	.58	18 × 26 "	.95
9 × 11 "	.32	18 × 30 "	1.00
9 × 12 "	.32	18 × 48 "	2.35
9 × 13 "	.36	18 × 50 "	2.35
9 × 14 "	.38	18 × 60 "	2.50
9 × 15 "	.45	20 × 24 "	1.05
9 × 17 "	.50	20 × 27 "	1.08
9 × 20 "	.58	20 × 30 "	1.16
10 × 12 "	.38	22 × 27 "	1.12
10 × 14 "	.40	22 × 30 "	1.20
10 × 15 "	.45	22 × 36 "	1.40
10 × 16 "	.45	24 × 30 "	1.25
10 × 18 "	.54	24 × 34 "	1.40
10 × 20 "	.63	24 × 36 "	1.60
10 × 22 "	.65	25 × 30 "	1.25
10 × 24 "	.72	26 × 36 "	1.55
11 × 15 "	.50	26 × 42 "	2.00
12 × 14 "	.50	27 × 34 "	1.50
12 × 15 "	.54	28 × 48 "	2.45
12 × 16 "	.54	29 × 36 "	1.60
12 × 17 "	.58	30 × 40 "	2.45
12 × 18 "	.58	30 × 42 "	2.45
12 × 20 "	.63	30 × 44 "	2.50
12 × 24 "	.76	30 × 50 "	2.90
12 × 30 "	.90	34 × 42 "	2.50
14 × 16 "	.63	34 × 44 "	2.65
14 × 17 "	.63	34 × 60 "	3.60
14 × 18 "	.68	36 × 42 "	2.50
14 × 20 "	.68	36 × 50 "	3.15
14 × 22 "	.68	36 × 60 "	3.80
14 × 24 "	.80	40 × 50 "	3.40
14 × 40 "	1.55	40 × 54 "	3.60
14 × 60 "	2.30		

Special and irregular sizes made and stretched to order, of Single Prime, Roman, Twilled, and Brush Prepared American Canvas.

Frost & Adams Co's

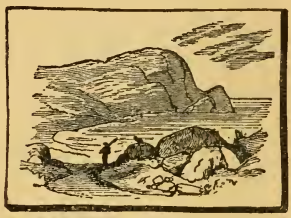
Prepared Canvas on Stretchers,

For Studies and Sketching.

	Each.		Each.
6 × 8 inches,	.25	14 × 26 inches,	.65
6 × 9 "	.25	14 × 28 "	.75
6 × 10 "	.25	15 × 18 "	.60
6 × 12 "	.25	15 × 27 "	.75
7 × 9 "	.25	16 × 20 "	.55
7 × 10 "	.25	16 × 22 "	.55
7 × 11 "	.25	16 × 24 "	.70
7 × 12 "	.25	17 × 21 "	.63
8 × 10 "	.25	17 × 25 "	.75
8 × 12 "	25	18 × 24 "	.75
8 × 16 "	.35	18 × 26 "	.75
8 × 18 "	.38	18 × 30 "	.80
8 × 20 "	.45	18 × 40 "	1.50
9 × 11 "	.25	18 × 50 "	1.80
9 × 12 "	.25	20 × 24 "	.80
9 × 13 "	.30	20 × 27 "	.85
9 × 14 "	.30	20 × 30 "	.85
9 × 15 "	.35	22 × 27 "	.85
9 × 17 "	.38	22 × 30 "	1.00
9 × 20 "	.45	24 × 30 "	1.00
10 × 12 "	.30	24 × 34 "	1.15
10 × 14 "	.30	24 × 36 "	1.25
10 × 15 "	.35	25 × 30 "	1.00
10 × 16 "	.35	26 × 36 "	1.20
10 × 18 "	.40	26 × 42 "	1.60
10 × 20 "	.50	27 × 34 "	1.15
10 × 24 "	.55	28 × 48 "	1.90
11 × 15 "	.40	29 × 36 "	1.25
12 × 14 "	.40	30 × 40 "	2.00
12 × 15 "	.45	30 × 42 "	1.90
12 × 16 "	.45	30 × 44 "	2.00
12 × 17 "	.45	30 × 50 "	2.15
12 × 18 "	.45	34 × 42 "	2.00
12 × 20 "	.45	34 × 44 "	2.10
12 × 24 "	.60	34 × 60 "	2.80
14 × 16 "	.45	36 × 42 "	2.00
14 × 17 "	.50	36 × 50 "	2.45
14 × 18 "	.50	36 × 60 "	3.00
14 × 20 "	.50	40 × 50 "	2.75
14 × 22 "	.50	40 × 54 "	2.80
14 × 24 "	.60		

Winsor & Newton's Superior Panels,

Prepared on perfectly well seasoned Mahogany.



No. 65.

6 × 8 inches,	.50	9 × 12 inches,	$1.10
7 × 9 "	.60	9 × 13 "	1.25
7 × 10 "	.70	9 × 14 "	1.30
8 × 10 "	.80	10 × 12 "	1.20
8 × 12 "	.95	10 × 14 "	1.50
8 × 13 "	1.05	10 × 13 "	1.40

American Panels for Oil Painting,

No. 66. Of Mahogany or Cherry-Wood, with Natural Surface.

6 × 8 inches,	.15	9 × 14 inches,	.40
7 × 9 "	.20	10 × 12 "	.40
7 × 10 "	.23	10 × 14 "	.45
8 × 10 "	.25	10 × 15 "	.50
8 × 12 "	.33	12 × 18 "	.75
9 × 12 "	.35	12 × 20 "	.80

Whitewood Panels.

Ebonized and Polished.

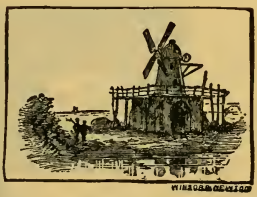
No. 67.

4 × 8 inches,	.40	6 × 18 inches	.55	11 × 22 inches,	1.10
5 × 10 "	.40	8 × 14 "	.55	12 × 20 "	1.20
6 × 10 "	.40	8 × 16 "	.60	12 × 24 "	1.40
5 × 12 "	.40	7½ × 18 "	.65	14 × 20 "	1.40
6 × 12 "	.50	8 × 18 "	.65	14 × 24 "	1.60
6 × 14 "	.50	8 × 20 "	.65	14 × 29 "	2.25
6 × 16 "	.50	9 × 18 "	.65	16 × 20 "	1.80
8 × 12 "	.50	9 × 20 "	.70	15 × 22 "	2.10
7 × 14 "	.50	10 × 20 "	.90	12 × 28 "	2.10
7 × 15 "	.50	10 × 24 "	1.00	13 × 32 "	2.50

Ragged Edge Panels.

2 × 4	inches,	. . . .	.01	4 × 8	inches,	. . . .	.04
3 × 3	"	. . .	.01	6 × 6	"	. . . .	.04
2½ × 4½	"	. . . .	.01	5 × 7	"	. . . .	.05
3½ × 4½	"	. . . .	.02	6½ × 8½	"	. . . .	.05
3 × 5	"	. . . .	.02	7 × 9	"	. . . .	.06
4 × 4	"	. . . .	.02	8 × 10	"	. . . .	.06
5 × 5	"	. . . .	.03	8 × 11	"	. . . .	.07
4 × 6	"	. . . .	.03	9 × 11	"	. . . .	.08
4½ × 6	"	. . . .	.03	10 × 14	"	. . . .	.10
4½ × 6½	"	. . . .	.03	11 × 15	"	. . . .	12

Winsor & Newton's Prepared Millboards.



No. 69.

6 × 5	inches,	. . . . .	.20	14 × 9	inches,	. . . . .	.50
7 × 5	"	. . . . .	.20	14 × 10	"	. . . . .	.60
8 × 6	"	. . . .	.25	14 × 12	"	. . . . .	.65
9 × 6	"	. . . . .	.25	15 × 11	"	. . . . .	.65
9 × 7	"	. . . . .	.30	15 × 12	"	. . . . .	.70
9 × 8	"	. . . . .	.30	16 × 11	"	. . . . .	.70
10 × 7	"	. . . . .	.33	16 × 12	"	. . . . .	.75
10 × 8	"	. . . . .	.33	17 × 12	"	. . . . .	.80
11 × 8	"	. . . . .	.35	17 × 13	"	. . . . .	.85
11 × 9	"	. . . . .	.40	17 × 14	"	. . . .	.90
12 × 8	"	. . . .	.40	18 × 12	"	. . . . .	.95
12 × 9	"	. . . .	.45	18 × 13	"	. . . . .	1.00
12 × 10	"	. . . .	.45	18 × 14	"	. . . . .	1.00
13 × 8	"	. . . .	.45	19 × 12	"	. . . . .	1.00
13 × 9	"	. . . . .	.45	19 × 13	"	. . . . .	1.00
13 × 10	"	. . . .	.50	19 × 14	"	. . . . .	1.05
13 × 11	"	. . .	.50	14 × 20	"	. . . .	1.10

Winsor & Newton's

Academy or Sketching Boards.

No. 70.

12¼ × 18½	inches,	. . . .	.20	18½ × 24½	inches,	. . . .	.38

Small sizes cut without extra charge. Am. Academy Boards, see APPENDIX.

Prepared Oil Sketching Paper.

Winsor & Newton's.

No. 71.
Thin, 21 × 30 inches, ...25 | Thick, 21 × 30 inches. . . .45

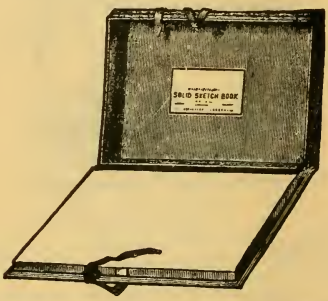
American Board and Paper at various prices, according to size and quality.

Frost & Adams'.

Smooth, 22 × 30 inches, . . .25 | Stippled, 22 × 30 inches, . . .25
Canvas Grain, 22 × 30 inches, .25 |

Tablets for Sketching in Oil,

Made of Winsor & Newton's Prepared Paper.



These Tablets are made on the principle of the Solid Blocks, and composed of Prepared Oil Sketching Paper. They have protective frames (as illustrated) which fit over the Tablets and protect the wet sketches.

No. 72.

Sizes.			Blocks Only.	Solid Books.
16mo, Imperial,	5 × 7	inches,	.75	$1.50
8vo, "	7 × 10	"	1.25	2.50
4to, "	10 × 14	"	1.75	3.50

Extra will be charged for Tin Frame.

Oils.

2 oz. Round Glass Bottles.

No. 73. Winsor & Newton's Nut Oil, ...25
" " Poppy Oil, ...25
" " Linseed Oil, ...20
" " Strong Drying Oil, ...25
" " Pale " 25

Frost & Adams Co's Oils, Etc.

No. 74.

Hoit's Clarified Drying Oil,	.20	French Nut Oil,	.20
Light or Pale "	.20	" Poppy Oil,	.20
Deep or Strong "	.20	Edouard's Mixtion,	.15
Linseed Oil,	.15	Spirits Turpentine,	.10

New Preparations for Painting on Silk and Satin.

No. 74½.

Adoizi Medium,	.60	Silk Oil,	.25
Oleo Excelsior,	.35	Decoline,	.25
Mordant,	.50		

"T. G. Vibert's" French Oils and Varnishes.

Vernis a Tableaux,	.60	Huile ent de Petrole,	.40
" a retoucher,	.60	Essence de Petrole,	.40
" a pendre,	.60		

Varnishes.

No. 75.

Winsor & Newton's Strong Mastic Varnish,	.90
" " Picture " "	.75
" " Picture Copal "	.40
" " Crystal "	.35

2 oz. Round Glass Bottles.

Frost & Adams Co's Varnishes.

No. 76.	Retouching Varnish,	.25
	French Retouching Varnish, (1 oz. square bottles,)	.30
	Grecian Varnish,	.25
	Picture "	.25
	Extra Picture Varnish,	.35
	Copal "	.25
	Extra Copal "	.35
	Mastic "	.50
	White Damar "	.20
	White Lac "	.25
	Roberson's Medium, Small,	.20
	" " Medium,	.40
	" " Large,	.75
	Amber Enamel, large,	.50
	" " small,	.25

Siccatif.

No. 77.	Siccatif de Harlem, 1 flacon,	$1.00
	" " ½ "	.50
	Siccatif de Courtray, per bottle,	.25

SECTION III.

BRUSHES.

FOR

WATER AND OIL COLOR PAINTING.

Winsor & Newton's Finest Brown or Red Sable Brushes, in Quills,

For Water Color Painting.

(Size of Brushes.)

No. 78.	Crow Quill, ...	25
	Duck "	37

No. 78.	Small Goose Quill,	45
	Goose Quill,	62
	Extra Goose Quill,	85
	Extra Small Swan Quill,	1.50
	Small "	1.95
	Middle "	2.50
	Large "	3.50

NOTE.—These Brushes are made of the finest unadulterated hair, and are manufactured by skilled workmen, on Messrs. Winsor & Newton's premises. Rowneys' Sables in Quills about 10 per cent. less.

Winsor & Newton's Fine Siberian Hair Brushes, in Quills.

Tied with Silver Wire.

For Illustrations, see page 42.

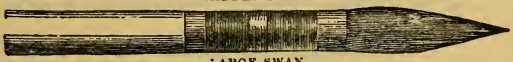
No. 79.	Large Swan Quill,	88
	Middle "	.60
	Small "	.40
	Extra Small Swan Quill,	.25

French Siberian Hair Brushes, in Quills.

EXTRA SMALL SWAN.

SMALL SWAN.

MIDDLE SWAN



LARGE SWAN

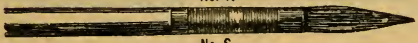
(Size of Brushes.)

No. 80.	Extra Small Swan Quill,	20
	Small "	30
	Middle "	.40
	Large "	50

French Sable and Camel Hair Brushes, in Quills

No. 2.

No. 4.

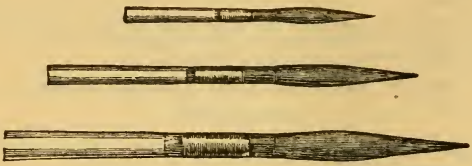


No. 8.

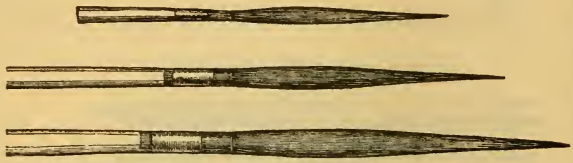
No. 81.	French Red Sables in Quills. 1 to 8, each,	.20 to .40

No. 82. French Camel Hair in Quills, 1 to 8, Tied with Gilt String, first quality, each, ...05 to .10
Ditto, second quality, ...03 to .05

French Writing and Striping Pencils, in Quills.



WRITERS.



STRIPERS.

No. 83. Black and Red Sable Writing and Striping Pencils, a very complete assortment, various lengths and sizes, each, . . .16 to .60

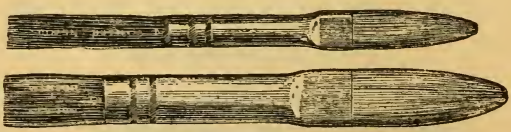
No. 84. Camel Hair Writing and Striping Pencils, a fine assortment, from ½ inch to 2½ inches in length, superior quality, each, . .05 to .10

Siberian Ox Hair Stripers.

No. 85. 1, 1¼, 1½, and 2 inch, each, ...10 to .60

Superior Brush for Fresco and Carriage Painters.

Lyons' Hair Water Color Brushes.



LYONS' HAIR BRUSHES. (Size of Nos. 2 and 5.)

No. 86. Nos. 1 to 6, each, ...36

Winsor & Newton's Finest Brown or Red Water Color Sables, in Albata.

Round & Flat Water Color Sables, in Albata. Size of Brushes.

No. 87					
No. 0 size,	.35	No. 3 size.	.55	No. 6 size,	.90
1 "	.35	4 "	.65	7 "	1.25
2 "	.45	5 "	.75		

NOTE.—The above Brushes have EBONY Handles, and are marked with THREE nerls on their ALBATA Ferrules.

Frost & Adams Co's Brown and Red Water Color Sables. Black Polished Handles, Plated Ferrules.

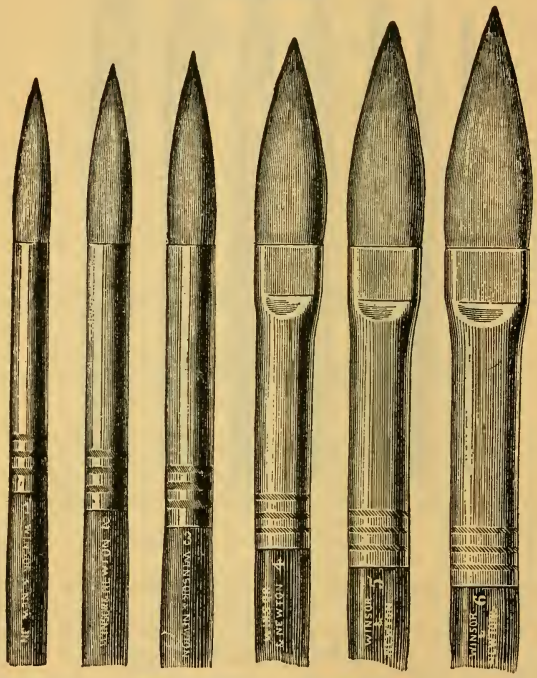
No. 88.	RED.		BROWN.	
No 0 size, . . .	.18	No. 0 size, . . .	.18
1 " . . .	.20	1 " . . .	.20
2 " . . .	.25	2 " . . .	.25
3 " . . .	.30	3 " . . .	.30
4 " . . .	.35	4 " . . .	.35
5 " . . .	.40	5 " . . .	.40
6 " . . .	.45	6 " . . .	.45
7 " . . .	.60	7 " . . .	.60

Frost & Adams Co's Extra Large Series Water Color Sables, in Albata.

No. 1, . . .	1.50	No. 3, . . .	3.00
2, . . .	2.25	4, . . .	3.75

Winsor & Newton's Finest Brown or Red Water Color Sables, in Albata.

Extra Large Series.



ROUND AND FLAT SABLES IN ALBATA.—EXTRA LARGE SERIES. (Size of Brushes.)

No. 89	Black.	Red.		Black.	Red.
No. 1 size, Round,	$2.50	$2.15	No. 1 size, Flat, .	$2.50	$2.15
2 " "	3.60	3.15	2 " " .	3.60	3.15
3 " "	4.50	4.10	3 " " .	4.50	4.10
4 " "	5.80	5.15	4 " " .	5.80	5.15
5 " "	7.40	6.25	5 " " .	7.40	6.25
6 " "	8.40	7.25	6 " " .	8.40	7.25

NOTE.—The above Brushes have *Ebony* Handles, and are marked with *three* nerls on their *Albata* Ferrules.

Winsor & Newton's British Black Sables in Nickeled Ferrules, Black Walnut Handles.

No. 0 size, ...30	No. 3 size, . . .45	No. 6 size, . . .90
1 " 30	4 " . . .55	7 " . . 1.10
2 " 35	5 " . . .65	8 " . . 1.35

Winsor and Newton's British Red Sables in Nickled Ferrules, Black Walnut Handles.

No. 00 size, . . .20	No. 4 size, . . .35	No. 9 size, . . 1.25
0 " . . .20	5 " . . .40	10 " . . 1.55
1 " . . .20	6 " . . .50	11 " . . 2.00
2 " . . .25	7 " . . .70	12 " . . 2.50
3 " . . .30	8 " . . .95	

Winsor & Newton's Round and Flat Bristle Brushes, Series C, in Polished Natural Cedar Handles, American Sizes.

No. 1 size, ...08	No. 5 size, ...11	No. 9 size, . . .15
2 " 08	6 " 11	10 " 15
3 " 10	7 " 12	11 " 18
4 " 10	8 " 12	12 " 18

Japanese Brushes.

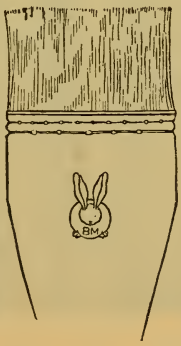
As Imported by Bunkio Matsuki.

These "are the best" made in "*Japan*." Accept none without the "RABBIT" trade mark.

DESCRIPTIVE.

The illustrations are about three-fourths actual size.

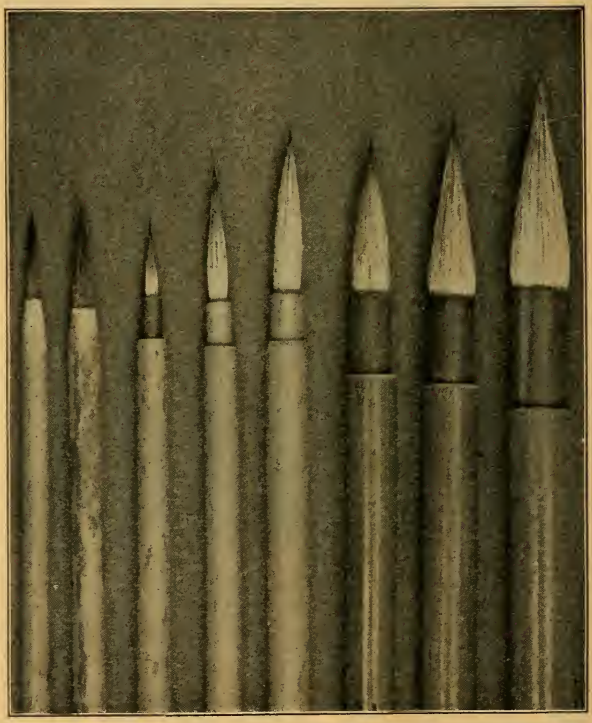
Nos. 1, 2, and 3 are called Chinzan Brush; derived its name from that of famous painter about 1780-1820; has a most important place in work of present day because of its practical use in drawing landscapes, flowers, birds, etc.



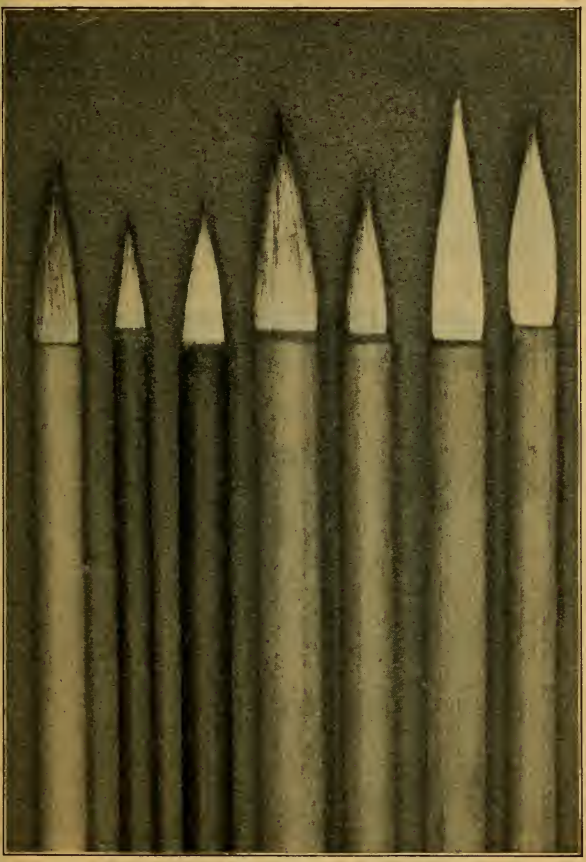
Nos. 4 and 5 are Korin Brush, so-called from the name of the renowned master of the latter part of the 17th century, who used this style of brush. It is of great valne in sketching stems, petals of flowers, etc.

Nos. 6, 7, and 8 are called Menso Brush, and are generally used in drawing leaf veins, calyx, and pistils of flowers.

Nos. 9 and 10. Shijio Brushes have long and rather soft bristles, and used by followers of Shijio School. They are very useful for sketching flowers, birds, landscape, etc.



8	7	6	5	4	3	2	1	
.18	.25	.15	.18	.25	.25	.35	.45	Net.



15	14	13	12	11	10	9	
.05	.12	.18	.50	.35	.35	.25	Net
			46 *c*				

Nos. 11 and 12 are used by famous master Okio Maruyama, and very valuable in retaining paint for a long period, and gives beautiful, modulated tone.

Nos. 13 and 14. Art School Brushes added new life to the work of Japanese painters. This great brush was invented by the late Kano Hogai and is now one of the most popular brushes in use among the pupils of the Tokio Art School. It has peculiar merit in making thin or broad li es in one stroke.

No. 15 is our celebrated School Brush which cannot be equalled in merit and price, and is extensively used in the public schools in this country. There are already worthless imitations. None genuine without the "Rabbit" trade mark.

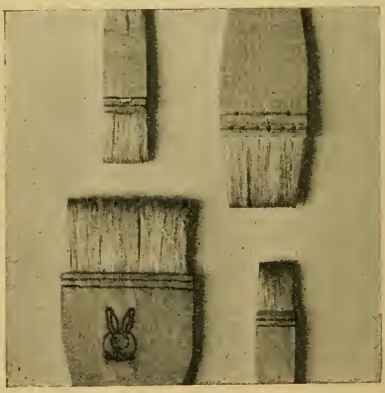
Nos. 16, 17, 18 and 19. Hake or Flat Brush used for general wash work, and is one of the most important brushes used in our water color work. See page 46 *d*.

We carry also brushes of higher grade and price.

DIRECTIONS FOR USING THE BRUSHES.

Before and after you use the brush rinse it in clear water in a good sized bowl, but do not wash with fingers or rub against bowl.

18 17

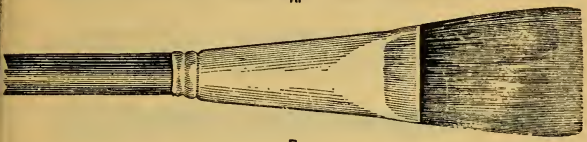


6 19

16,	1 3-4	inches,	.35
17,	1 1-4	"	.25
18,	5-8	"	.18
19,	1-2	"	.10

Winsor & Newton's Sky or Wash Brushes for Water Color Painting.

A.



B.

C.

No. 90.	A.	Round, Wire Bound, Siberian Hair, ...	$1.00
	B.	Flat, Dyed Sables, in Tin, ...	1.50
	C.	Round, Dyed Sables, in Tin, ...	1.50

Pocket Sketch Brushes, for Water Color Painting.

These Brushes are made so they may be carried in the pocket without detriment to the point, and are very convenient for out-door sketching.

No. 91.	Winsor & Newton's Large Size Finest Brown Sable, in Albata,	$3.45
	" " Small " " " "	2.75
	French Siberian Hair, in Plated Metal, ...	.38

Frost & Adams Co's French Camel Hair Brushes, in Tin, for Water Color Painting, Tinting or Lacquering.

No. 92.	6 sizes, Round, ...	each,	.12 to .20
	6 " Flat	"	.12 to .20
	Double Enders, brush at either end, ...	"	.30

French Siberian Tinting Brushes, Plated Ferrules,

For Architects' and Engineers' Use.

(Size of No. 8.)

No. 93.	12 sizes, Round, ...	each,	.10 to .30
	Double Enders, brush at either end, ...	"	.30 to .60

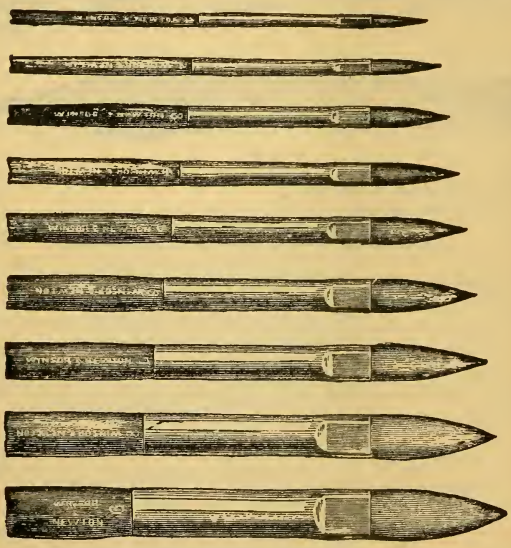
French Split Quill Camel Hair Brushes,

For Gilders.

No. 94.	2 Quill, Round Domed or Square Point,	.11
	3 " " " "	.16
	4 " " " "	.21
	5 " " " "	.27
	6 " " " "	.33

Winsor & Newton's Red Sables, in Tin, for Oil Painting.

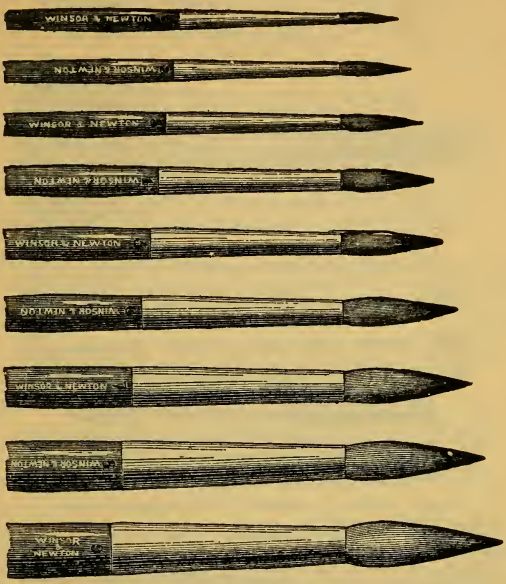
Polished Cedar Handles.



FLAT RED SABLES IN TIN. (Size of Brushes.)

No. 95.

No. 1 size,	.18	No. 7 size,	.80
2 "	.25	8 "	.90
3 "	.30	9 "	1.05
4 "	.35	10 "	1.25
5 "	.40		
6 "	.50		



ROUND RED SABLES, IN TIN. (Size of Brushes.)

No. 96.

Prices of Winsor & Newton's Round Red Sables, in Tin, same as Flat Red Sables, in Tin, page 48. Prices of 00 and 0, in series Nos. 95, 96 and 97, .24.

Winsor & Newton's Fine Sable "Rigger" Brushes, in Tin,

For Delicate Work, Fine Line Drawing, &c.

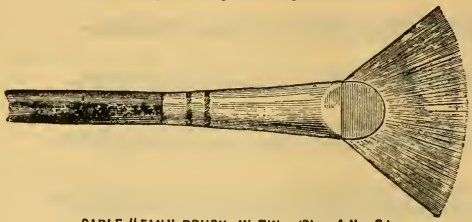
SABLE "RIGGER" BRUSHES, IN TIN. (Size of Nos. 0, 2, and 4.)

No. 97.

Nos. 000 to 6. Prices same as those of Round Red Sables, in Tin, above described.

Winsor & Newton's Fine Sable "Fan" Brushes, in Tin,

For Light Glazing, Softening, Scumbling, Hair, Foliage, &c.



SABLE "FAN" BRUSH, IN TIN. (Size of No. 6.)

No. 98.

No. 1, . .	.50	No. 3, . .	.55	No. 5, . .	.60
" 2, . .	.55	" 4, . .	60	" 6, . .	.65

Winsor & Newton's Fine Sable "Bright's" Brushes, in Tin,

For Firm Square Touching, and General Landscape Work.

SABLE "BRIGHT'S" BRUSHES, IN TIN. (Size of Nos. 3 and 6.)

No. 99.

Sizes (in point of width) and Prices same as those of Flat Red Sables, in Tin. (See page 48.)

Frost & Adams Co's Round and Flat Red Sable Brushes, for Oil Painting.

Red Polished Handles.

Sizes averaging about one-half size of Winsor & Newton's. (See illustrations, Nos. 95 and 96.)

No. 100.

No. 1 size, . .	.10	No. 7 size, . .	.24	No. 13 size, . .	.40
2 " . .	.12	8 " . .	.26	14 " . .	.45
3 " . .	.15	9 " . .	.28	15 " . .	.50
4 " . .	.18	10 " . .	.30	16 " . .	.60
5 " . .	.20	11 " . .	.32	18 " . .	.70
6 " . .	.22	12 " . .	34	20 " . .	.80

Flat Badger Brushes for Oil Painting, as a substitute for Sable

Frost & Adams Co's Round and Flat Fitch Brushes, in Tin, for Oil Painting.

Cedar Handles, a very good substitute for Sable Brushes.

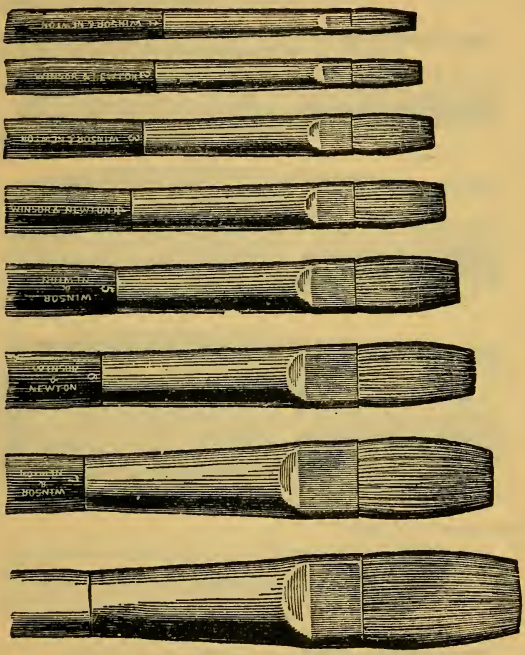
No. 101.

Sizes 1 and 2, . . .	each,	.08	Sizes 7 and 8, . .	each,	.15
3 and 4, . . .	"	.10	9 and 10, . .	"	.17
5 and 6, . . .	"	.12	11 and 12, . .	"	.20

Sizes averaging about one-half size of Winsor & Newton's. (See illustrations, Nos. 95 and 96.)

Winsor & Newton's Flat Bristle Brushes, in Tin.

Polished Cedar Handles.

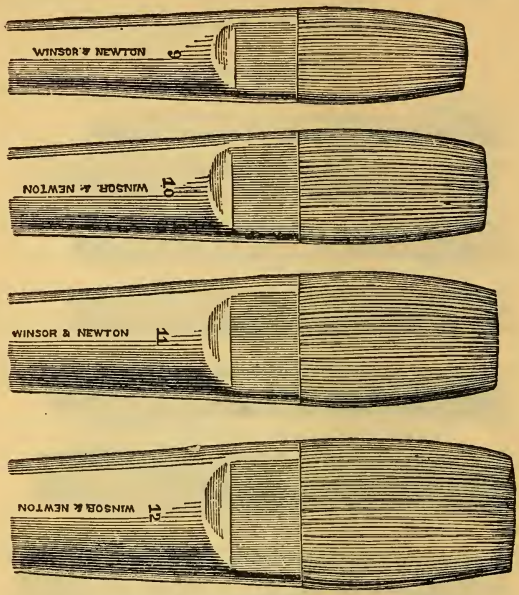


FLAT BRISTLE BRUSHES IN TIN. (Size of Nos. 1 to 8.)

No. 103.

No. 0 size,	.12	7 size,	.17
1 "	.12	8 "	.20
2 "	.14	9 "	.23
3 "	.14	10 "	.25
4 "	.15	11 "	.28
5 "	.15	12 "	.35
6 "	.17		

NOTE.—Winsor & Newton's Bristle Brushes are made from selected stock, and are recommended for their superior toughness and durability.



FLAT BRISTLE BRUSHES, IN TIN. (Size of Nos. 9 to 12.)

Prices of above on page 51.

Bristle "Landseer's" Brushes, in Tin, for Fur, &c.

Very long and thin of hair.

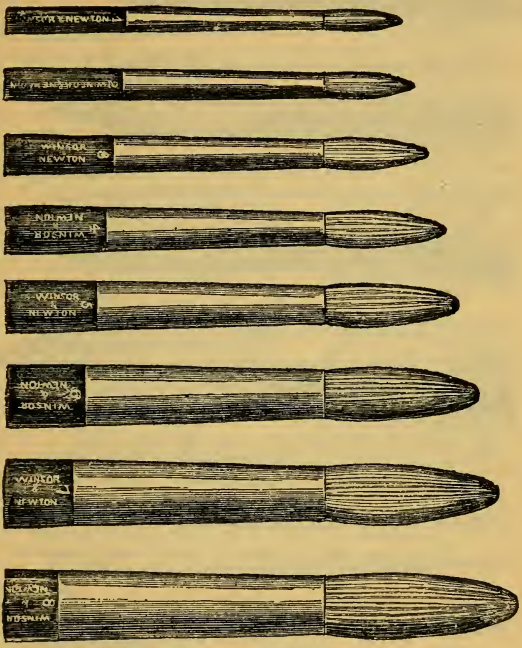
BRISTLE "LANDSEER'S" BRUSHES, IN TIN. (Size of Nos. 2 and 4.)

No. 104.

Sizes (in point of width) and Prices, same as those of the Flat Bristle Brushes. (See page 51.)

Winsor & Newton's Round Bristle Brushes, in Tin.

Polished Cedar Handles.

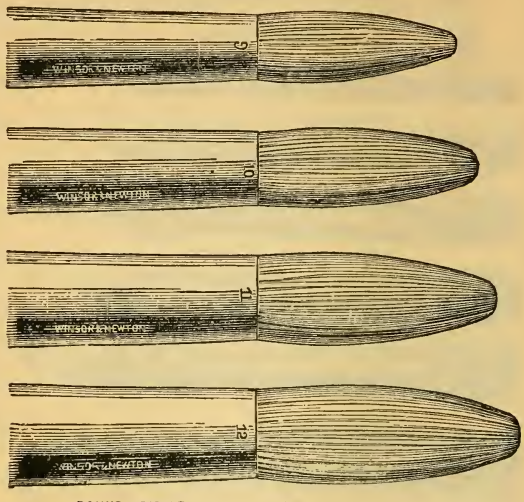


ROUND BRISTLE BRUSHES, IN TIN. (Size of Nos. 1 to 8.)

No. 105.

No. 0 size,	Net,	.12	No. 7 size,	Net,	.17
1 "	"	.12	8 "	"	.20
2 "	"	.14	9 "	"	.23
3 "	"	.14	10 "	"	.25
4 "	"	.15	11 "	"	.28
5 "	"	.15	12 "	"	.35
6 "	"	.17			

NOTE.—Winsor & Newton's *Extra Fine* Bristle Brushes, in tin, made of the finest and softest Lyons' Bristles, feather edged, and graduated so as to blend and keep well together in working (ranging in grade between Sable Hair and Ordinary Bristle Brushes, combining somewhat of the softness of the former with the firmness of the latter), imported to order.

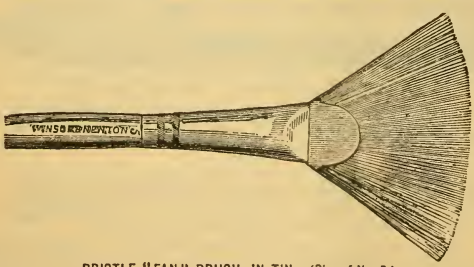


ROUND BRISTLE BRUSHES, IN TIN. (Size of Nos. 9 to 12.)

Prices of above on Page 53.

Winsor & Newton's Extra Fine Bristle "Fan" Brushes, in Tin,

For Light Touching, Slight Dragging, Scumbling; also, Hair, Foliage, Herbage, &c.

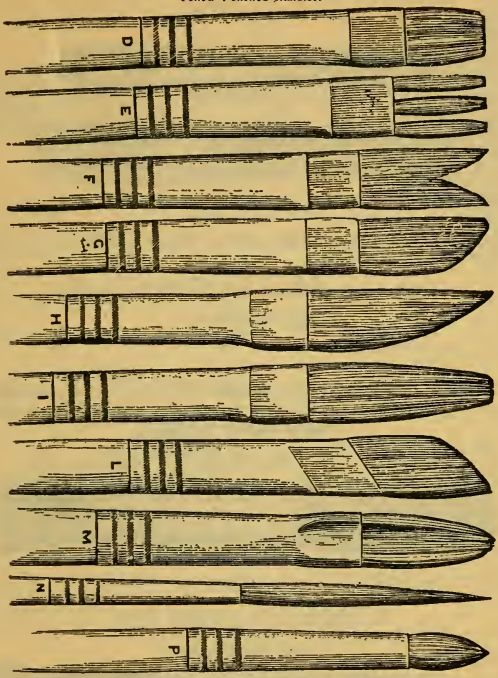


BRISTLE "FAN" BRUSH, IN TIN. (Size of No. 5.)

No. 106.	Nos. 1, 2 and 3, ...	each,	.35
	4, 5 and 6, ...	"	.40

Winsor & Newton's Special Extra Fine Bristle Brushes.

Yellow Polished Handles.



SPECIAL EXTRA FINE BRISTLE BRUSHES.

NOTE.—These Brushes are made at the suggestion, and after the patterns, of some of the most eminent Artists of the day. The hair of which they are composed is specially prepared, so as to insure the Brushes keeping their peculiar shapes. The various shapes, as illustrated, will suggest to Artists the use to which they are best adapted. For instance, F is double-pointed, affording a peculiar touch when pressed laterally on the canvas; G is carefully made to resemble a worn brush, but not cut or trimmed; H is of long, feathery edge, affording sweeping touches—and so on through the list.

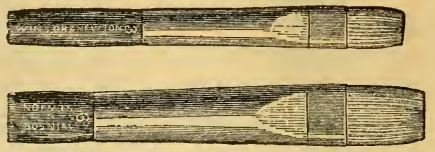
No. 107. Any of the above shapes (and in various sizes), each, Net, .25

Devoe's Black Handle Bristle Brushes for Oil.

Sizes 1 to 12, ... each, .10 to .35

Bristle "Bright's" Brushes, in Tin, for Landscape, &c.

Short and full of hair.



BRISTLE "BRIGHT'S" BRUSHES, IN TIN. (Size of Nos. 3 and 6.)

No. 108.

Sizes (in point of width) and Prices same as those of the Flat Bristle Brushes. (See page 51.)

Frost & Adams' Round and Flat Bristle Brushes.

Red Polished Handles.

No. 109. Assorted Nos. 1 to 6, ...08
" " 7 to 12, ...08

The above two-thirds the size of corresponding numbers of Illustrations of Nos. 103 and 105, pages 51 and 53. For Bright's and Landseer's, see APPENDIX.

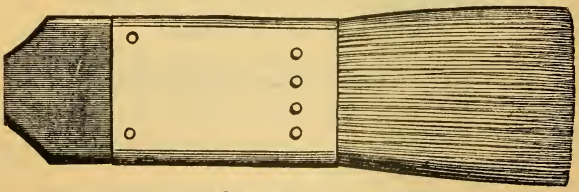
Bristle Poonah Brushes.

Stained Handles.

No. 110. 6 sizes, either size, ...08

Flat Bristle Varnish Brushes, in Tin.

Cedar Handles, Nailed.

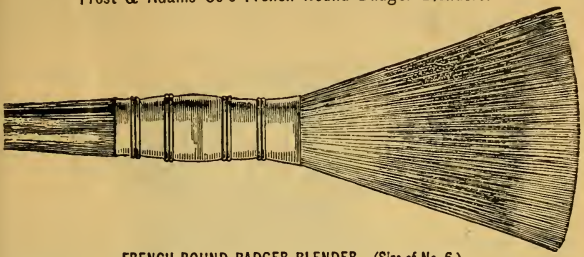


FLAT BRISTLE VARNISH BRUSH. (Size of the 1 inch Brush.)

No. 111.

1 inch wide,	.15	2½ inch wide,	.38
1½ "	.20	3 "	.45
2 "	.30	4 "	.60

Frost & Adams Co's French Round Badger Blenders.

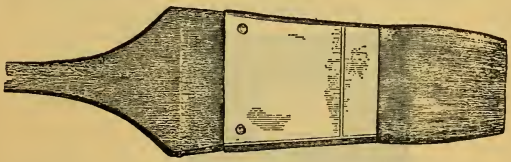


FRENCH ROUND BADGER BLENDER. (Size of No. 6.)

No. 112.

No. 1 size,	.15	No. 7 size,	.60
2 "	.20	8 "	.70
3 "	.25	9 "	.80
4 "	.30	10 "	.90
5 "	.40	11 "	1.10
6 "	.50	12 "	1.25

Flat Camel Hair Varnish Brushes, in Tin.



FLAT CAMEL HAIR, IN TIN. (Size of 3-4 inch Brush.)

No. 113.

1 inch wide,	.38	2 inch wide,	.75
1¼ "	.45	2¼ "	.95
1½ "	.55	3 "	1.15

French Camel Hair Mottlers or Spalters.

Riveted, Short Stained Handles.

No. 114.

1 inch wide,	Net, .35	2 inch wide,	Net, 1.00
1¼ "	" .50	2½ "	" 1.25
1½ "	" .65	3 "	" 1.50
1¾ "	" .80		

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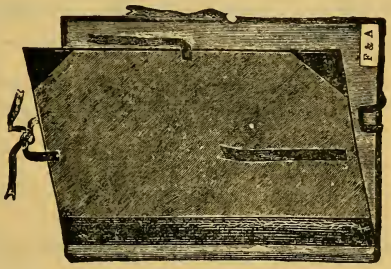

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42 "	1.60	36 "	5.75	5.50
		42 "	6.50	6.25

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36 "	1.40	30 "	5.25	3.50
42 "	1.60	36 "	5.75	4.25
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42 "	1.80

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36 "	"	4.70
42 "	"	5.30

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42 "	"	6.25

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Special Trays are made for Nigrosine work.

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Drawing Papers in Continuous Rolls.

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36 inches wide, in rolls of 30 to 40 pounds,	.40	.20
42 " " " "	.40	.25
56 " " " "	.40	.35
62 " " " "	.40	.40

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62 " " " "	.45	.50
72 " " " "	.50	.65

EGG SHELL.—A desirable and reliable paper for large plans.

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36 inches wide, in rolls of 30 to 40 pounds,	.45	.35
42 " " " "	.45	.36
58 " " " "	.45	.45

DUPLEX.—A detail drawing paper. A fine paper for ink or color work.

MEDIUM CREAM TINT.

	Per pound.	Per yard.
36 inches wide, in rolls of 30 to 40 pounds,	.29	.15
42 " " " "	.32	.20
56 " " " "	.29	.25

THICK DARK DRAB.

	Per pound.	Per yard.
36 inches wide, in rolls of 30 to 40 pounds,	.29	.18
56 " " " "	.29	.30

PARAGON.— These papers have an egg shell surface and are adapted for general drawings in line or wash. A superior paper.

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42 " " " " . .	.50	.38
58 " " " " . .	.50	.50

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42 " " " " . .	.13	.13
48 " " " " . .	.13	.15
60 " " " " .	.15	.25
72 " " " " . .	.15	.30

Manila Roll Drawing Papers.

For Detail Drawing.

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48 inches wide, Buff Tint Manila (XXX) extra heavy,	per yard,	.15
48 " " " (XX) medium,	"	12
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O. K. Drawing Paper, a superior article, 36, 40, 44 and 48 inches wide.

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		Per roll.	Per yard.
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C. 42 " "	"	8.00	.90
C. 36 " "	"	6.50	.80

			Per roll.	Per yard.
E. 24 inch	Egg Shell,	10 yards,	$6.50	.80
E. 30 "	"	"	8.00	90
E. 36 "	"	"	8.50	1.00
E. 42 "	"	"	9.50	1.10
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E. 59 "	"	"	11.50	1.35
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P. 36 "	Paragon,	"	8.50	1.00
P. 42 "	"	"	9.50	1.10
P. 59 "	"	"	12.00	1.40
W. 54 "	Imitation of Whatman's,	"	10.50	1.20

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A Paper of Superior Quality for Ink or Pencil.

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In twenty different surfaces. Made in three sizes. Send for samples.

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Unexcelled for Pencil Sketching and Shading

	Per sheet.	Per quire.
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Sketch Books, 5 × 9 inches,	.75

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" "	"	36 "	. .	7.60	.45
" "	"	42 "	. .	10.50	.50
" "	"	48 "	. .	14.20	.65
" "	"	54 "	. .	15.00	.75

Dowse's Tracing Cloth.

Dull Back, or Glazed Both Sides.

No. 141 x.	In rolls of	24 yards,	30 inches wide,	. . per roll,	$6.00
	" "		36 "	. . "	7.00
	" "		42 "	. . "	9.35

Segar's Tracing Cloth.

Dull Back, or Glazed Both Sides.

No. 141 x.	In rolls of	24 yards,	30 inches wide,	. per roll,	$6.90
	" "		36 "	. . "	7.60
	" "		42 "	. . "	10.50

Tracing Papers — Continuous in Rolls.

No. 141½.				
Alba,	22 yards long,	54 inches wide,	. . . . .	$2.50
"	44 "	54 "	. . . . .	5.00
Libra,	20 "	42 "	. . . . .	2.00
Gothic,	20 "	42 "	. . . . .	3.65
Economy,	50 "	60 "	. . . . .	3.25
Lotus,	20 "	42 "	. . . . .	1.50

Superior Tracing Papers — Continuous in Rolls.

No. 142					
English,	20 yards long,	40 inches wide,	. . . .	per roll,	$2.75
French,	22 "	40 "	. . . .	"	5.00
"	11 "	40 "	. . . .	"	2.75
"	22 "	57 "	. . . .	"	4.50
"	44 "	44 "	white, . .	"	3.50
"	22 "	44 "	" . .	"	1.80
"	11 "	44 "	" . .	"	.85

No. 143		Per quire.	Per sheet.
Double Elephant,	27×40 inches, . . .	$2.00	.15
Imperial,	20×30 "	1.50	.08
Vegetal,	19×24 "	2.00	.12
D. E. Vegetal,	27×40 "	7.50	.35
American, 16-Bond,	21×33 "	1.50	.15
" "	19×30 "	1.25	.10
Flaxine,	21×31 "	2.50	.15

Tracing Papers and Bond Papers — Continuous in Rolls.

Thin Parchment,	20 yards long,	37 inches wide,			$3.25
Thick "	10 "	37 "			3.20
Bond Tracing,	20 "	42 "			1.50
Bank Note Tracing,	20 "	36 "			1.35
Bond Tracing, Crane's No. 16,	20 "	30 "			2.00
Abacus,	10 "	42 "			2.75
Patera,	20 "	42 "			3.85
Corinthian,	20 "	39 "			4.00
Doric,	20 "	42 "			2.60
Electric,	22 "	54 "			2.25
"	44 "	54 "			4.50
No. 2 English,	20 "	42 "			4.00
No. 3 "	20 "	42 "			1.75
No. 2343 French,	22 "	42 "			3.50
Hulp Mills A Parchment,	20 "	40 "			5.00
" B "	20 "	40 "			5.00
" C "	20 "	40 "			2.75
No. 2332 French,	22 "	43 "			3.00
No. 2334 "	22 "	43 "			2.00
No. 2336 "	11 "	43 "			1.75
Buff Tint,	22 "	48 "			1.00
"	44 "	48 "			2.00

Tracing Papers in Sheets.

		Per quire.	Per sheet.
French Vegetal,	22×30,	$3.00	.15
" " Thick,	30×40,	8.50	.40
" White, Common,	22×30,	1.20	.08
English No. 1,	20×30,	1.10	.08
" No. 3,	20×30,	1.75	.15
" No. 4,	20×30,	1.50	.12
" No. 9,	20×30,	1.50	.12
Boston Bond, No. 16, American,	28×44,	2.50	.20
" " No. 16, "	21×33,	1.50	.15
" " No. 16, "	19×30,	1.25	.12
Crane's Bond, No. 16, American,	19×30,	1.25	.12
" " No. 16, "	27×40,	3.50	.35
" " No. 21, "	19×30,	1.50	.15
" " No. 21, "	27×40,	4.00	.35
" " No. 10, "	old style, 21×31,	2.50	.20
Onion Skin,	17×22,	.75	.05

Strathmore Boards.

A New American Bristol Board and Paper for Illustrating.

No. 5 A— Fine Grain Paper,	23×29,	per sheet,	.08
No. 7 A— " " 2-Ply,	23×29,	"	.15
No. 10 A— " " 3-Ply,	23×29,	"	.20
No. 12 A— " " 4 Ply,	23×29,	"	.25

Smooth High Finish.

No. 8 A—Smooth 2-Ply,	23×29,	per sheet,	.15
No. 11 A— " 3-Ply,	23×29,	"	.20
No. 13 A— " 4-Ply,	23×29,	"	.25
No. 14 A— " 5-Ply,	23×29,	"	.30

Tinted Crayon Papers.

No. 144.

English Double Elephant,	27 × 40 inches,	per sheet,	.20
" Imperial,	22 × 30 "	"	.12
French "	21 × 28 "	"	.10
" Royal,	19 × 24 "	"	.08
Green's Erasive Papers,	22 × 30 "	"	.35

French Charcoal Papers.

No. 145.

Ordinary,	Royal, 19 × 24 inches,	per sheet,	.05
Michalet,	" " "	"	.06
Lalanne,	" " "	"	.06
Allonge,	" " "	"	.08
Rose,	" " "	"	.08
Butter Paper,	" " "	"	.10
Coquelin,	" " "	"	.10
Julio,	" " "	"	.06

French Pastel Paper, &c.

No. 146.

Pastel Paper, Royal,	19 × 24 inches,	per sheet,	.20
" Imperial,	21 × 28 "	"	.25
French Pastel Board,	23 × 29 "	"	.65
American Monocromatic Board,	21 × 28 "	"	.45
Pastel Paper, Double Elephant,	27 × 40 "	"	.60

Reynolds' & Turnbull's Abraded Boards.

No. 147.			2 sheet.	3 sheet.	4 sheet.
Cap,	15 × 12 inches,	per sheet,	.15	.20	.25
Demy,	18 × 14 "	"	.20	.25	.35
Medium,	20½ × 15½ "	"	.25	.40	.50
Royal,	22 × 17½ "	"	.50	.75	.80

Reynolds' & Turnbull's Bristol Boards.

No. 148.		2 sheet.		3 sheet.		4 sheet.	
		Doz.	Sheet.	Doz.	Sheet.	Doz.	Sheet.
Cap,	15 × 12 inches,	.60	.10	.90	.13	1.20	.15
Demy,	18 × 14 "	.90	.15	1.35	.20	1.75	.25
Medium,	20½ × 15½ "	1.20	.20	1.80	.25	2.40	.30
Royal,	22 × 17½ "	1.50	.25	2.40	.33	3.10	.40
Super Royal,	26 × 18 "	3.25	.40	4.00	.47	6.00	.55

English Mounting Boards.

No. 149.

Imperial, Whatman's,		.25	.30	.40	.50
Double Elephant,	26 × 28½ inches,				.60
Pulp Board for Mounting,	22 × 30 "				.15
" "	27 × 39 "				.20
" "	36 × 48 "				.50

French Tinted Mounting Boards.

Blue Grey.

No. 150.

Royal, 19 × 24 inches,	3 sheets in thickness,		.17
" 20 × 26 "	8 " "		.30
" 20 × 26 "	10 " "		.40

American Mounting Boards.

No. 151.

Imperial,	22 × 30 inches,	6 sheets in thickness,	.12
Half Imperial,	15 × 22 "	6 " "	.07

Boards thicker than the above at higher prices.

Transfer Papers.

No. 152.

Black Transfer Paper,	12 × 18 inches,	per sheet,	.08
Blue "	" "	"	.08
Red "	" "	"	.08
Green "	" "	"	.08

Miscellaneous.

No. 153.	French Tinted Paper, 5 × 33 feet,	per roll,	$3.00
	" " Crayon Board, 19 × 24 inches,	per sheet,	.20
No. 154.	Hand-made Crayon Paper, in Various Tints, 21 × 30 inches,	per sheet,	.20
No. 155.	Cattermole Paper, for Water Color Painting, 21 × 29 inches,	per sheet,	.25
No. 156.	American Folded Log Paper, 20 × 28 inches,	per quire,	.75
No. 157.	Black Card Board, 22 × 28 inches,	per sheet,	.15
	" " " " Extra Thick,	"	.30
	" Paper, " "	"	.10
	" Pebbled Paper, " "	"	.10
No. 158.	Blotting Paper, 19 × 24 inches,	per sheet,	
No. 159.	White Tissue Paper, 20 × 28 inches,	per dozen sheets,	.10

FROST & ADAMS CO'S CATALOGUE.

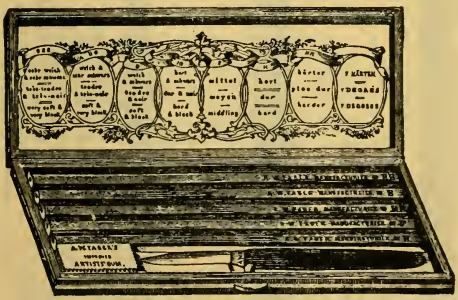
SECTION V.

DRAWING PENCILS,

RUBBER, ERASERS, STUMPS, CRAYONS, CHALKS, AND CHARCOAL.

A. W. Faber's Lead-Pencils.

A. W. Faber's Pencils, in Boxes.



BOX, 5 SIBERIAN PENCILS, KNIFE AND RUBBER.

No. 160.	5 Grades Siberian Pencils,		.90
	7 " "		1.10
	5 " "	and Knife and Rubber,	1.10
	10 " "		1.50
	10 " "	on cards,	1.50
	5 " English Yellow Silver,		.55
	7 " " "		.60
	5 " " "	Knife and Rubber,	1.00
	10 " " "		.85
	4 " Round Black Gilt,		.35

A. W. Faber's Siberian Pencils.

Tubular, &c.

1.

2.

3.

Description and Prices on following page.

A. W. Faber's Tubular Siberian Pencils,

For Architects' and Engineers' use, and all general purposes.

No. 161. 10 grades, from 3B to 6H, each, ...25

Illustrated on page 67, cut No. 2.

No. 162. A. W. Faber's Tubular Siberian Pencils (Double-Enders), each, . .40

Illustrated on page 67, cut No. 1.

No. 163. A. W. Faber's Artists', Ebony, 3½ inches long, ...35
" " " " 4 " 55

A. W. FABER'S

"Finest and Best" Hexagon Pencils.

Red Polished, Gold.

5 B to 6 H, ... each, .10; per doz. $1.00

No. 165. A. W. Faber's Siberian Leads for Tubular Pencils, 6 Leads in a box, ...50

No. 166. A. W. Faber's Extra Siberian Pencils, 10 grades, from 3B to 6H, best manufactured, each, .10; per dozen, ... $1.00

Illustrated on page 67, cut No. 3.

Winsor & Newton's Celebrated Lead Pencils in Boxes and separate.
Winsor & Newton's Leather Pencil Cases, ...50, .60 and .75

A. W. Faber's Pencils,

For Schools and Ordinary Use.

No. 167. A. W. Faber's Black Round Gilt, Nos. 1, 2, 3, 4, . . per dozen, .55
" " Hexagonal Gilt, Nos. 1, 2, 3, 4, 5, . " .90
" " Mathematical Pencils, for dividers, . " .70
" " English Yellow Silver, 10 grades, from 3B to 4H, each, .06; per dozen, ...55

Colored Pencils in Boxes and Singly.

No. 168. 6 Assorted Colors, in Box 4½ inches long, . . per box, .25
12 " " 4½ " . . " .50
18 " " 4½ " . . " .75
24 " " 4½ " . . " 1.00

No. 169. A. W. Faber's 6 Assorted Colors, in Box 7 inches long, per box, .75
" " 12 " " 7 " " 1.20
" " 18 " " 7 " " 1.75
" " 24 " " 7 " " 2.25

No. 170. A. W. Faber's Red, Blue, Green, Yellow, etc., ... each, .10
" " Red and Blue, Octagon. . . . . " .12

E. Faber's Extra Fine Lead Pencils.

DRAWING PENCILS.

VAN DYKE. Hexagon, Van Dyke Polish, Gold Stamp.

No.		Per Doz.
600.	BB, B, HB, F, H, HH, 3H, 4H, 5H, 6H, 7H, 3B, 4B, 5B, 6B .	1.20

REMBRANDT. Round, Olive Green Polish, Gold Stamp.

690.	BB, B, HB, F, H, HH, 3H, 4H, 5H, 6H, 7H, 3B, 4B, 5B, 6B .	1.00

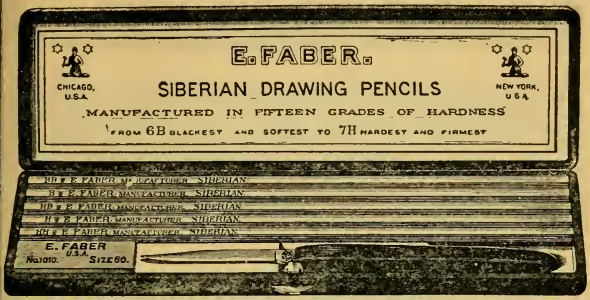
LINEAR. Hexagon, with Flat Leads for Accurate Draughting.

		each	
750.	H, 3H, 6H, ...	.08	.75

SIBERIAN. Hexagon, Natural Polish, Gold Stamp.

500.	BB, B HB, F, H, 2H. 3H, 4H, 5H, 6H, 7H . .	" .10	1.00
500.	3B, 4B, 5B, 6B	" .13	1 20

SIBERIAN IN DRAWING SETS.



		Per Set
508.	5 grades in set, BB to HH	.90
511.	5 " " B to HH, with knife and rubber	1.10
513.	7 " " BB to 3H	1.10
514.	10 " " BB to 6H	1.50

SIBERIAN ARTIST PENCILS. Hexagon, Natural Polish, Gold Stamp, with Tips and Movable Leads.

		Each
515.	BB to 6H	.25
516.	Double Ends F and HH, 3H and HB	.35

518.	Propel and Repel BB to 6H	.40

ENGLISH. Round, Natural Polish, Silver Stamp.

		Per Doz.
560.	BB, B, HB, F, H, HH, 3H, 4H, 5H, 6H	.50

ENGLISH. IN DRAWING SETS.

		Per Set
562.	5 grades in set BB to HH	.55
563.	7 " " BB to 3H	.60
564.	10 " " BB to 6H	.85
565.	5 " " B to HH, with knife and rubber	1.00
566.	5 " " B to HH, in paper box	.30

FREEHAND DRAWING. (Thick Lead Natural Polish, Silver Stamp.

		Per Doz.
420,	Hexagon, B, HB, H, Thick Lead	.50
430.	Round, B, HB, H, " "	.45

STUDENTS' DRAWING. Natural Polish, Silver Stamp.

480.	Hexagon, B, HB, H, HH, 3H	.40

UNIVERSITY. Walnut Polish, Gold Stamp.

360.	Round, B, HB, H, HH, 3H, 4H	.40

FINE DRAWING. Natural Polish, Silver Stamp.

365.	Round, B, HB, H, HH, 3H	.35

ARTISTIC. Walnut Polish, Gold Stamp.

3200.	Round, B, HB, H, HH, 3H	.35

SCHOOL.

310.	Round, Natural Polish, B, HB. H, Silver Stamp,	.25
350.	" Red " B, HB, H, " "	.25
351.	" Black " B, HB, H, " "	.25
200.	" Cedar " HB, Plain "	.25

COMMERCIAL PENCILS.

HEXAGON GILT. Extra Fine Rosewood Polish, Gold Stamp.

No.		Per Doz.
570.	Grade Nos. 1, 2, 3, 4, 5 and 6	.75

575.	Grade Nos. 2 to 4, with rubber	.75

ROUND GILT. Black Polish, Gold Stamp.

590.	Grade Nos. 1, 2, 3, 4 and 5	.50

595.	Grade Nos. 2, 3 and 4, with rubber	.60

TABLET PENCILS. Extra Fine Polish, Gold Stamp.

477.	Hexagon, Rosewood, Nos. 2 and 3	.50
497.	Round, Black, " 2 and 3	.40

Nickel Tip, Rubber Inserted. Extra Fine Rosewood Polish, Gold Stamp.

No.		Per Doz.
478.	Grade, Nos. 2 and 3, Hexagon, rubber inserted	.55

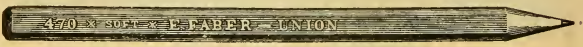
ARTISTS' PENCILS. Hexagon, Rosewood Polish, Gold Stamp, with moveable leads.

571.	Removable Points, Nos. 1 to 6	2.40
572.	Adjustable " " 1 to 6	3.00
576.	Propel and Repel, " 1 to 6	3.60

STENOGRAPHIC. Natural Polish, Silver Stamp.

597.	Round, Medium Hard	.50
588.	" " " with rubber	.55

UNION. Cardinal Red Polish, Gold Stamp.



470.	Hexagon, in 5 grades	.50
490.	Round " 5 "	.45

332.	Hexagon, Nos. 2 and 3, Gilt tips, with rubber	.60
343.	Round, " " " " "	.50

UNION ARTIST PENCILS. Hexagon, Red Polish, Tipped with Rubber, with moveable leads.

476.	Removable Points, tipped with rubber . .	each .20	1.50

STAR. Rosewood Polish, Silver Stamp.

No.		Per Doz.
370.	Hexagon, in 5 grades	.30
390.	Round, " 5 "	.25

COMMERCE. Nickel Tip, Rubber Inserted.

875.	Hexagon, Natural, Rosewood or Black	.40
395.	Round, " " or Walnut	.40

MEMO. Small Size, Silver Stamp, Nickel Tip, Rubber Inserted.

378.	Hexagon, Natural, Soft and Medium Hard	.40
398.	Round, Rosewood, " " "	.40

368.	Round, Rosewood, No. 2 with nickle cap	.35

TRIANGLE. Extra Fine Assorted Polish, Silver Stamp.

440.	Triangle, Nos. 2 and 3	.50

445.	Triangle, Nos. 2 and 3, Nickel Tip, Rubber Inserted	.55
4387.	Delta, " " Natural Polish	.50

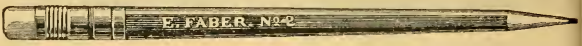
CORONET. Extra Fine Assorted Polish, Silver Stamp, Nickel Tip, Rubber Inserted

475.	Hexagon, HB and H	.50
495.	Round, HB and H	.45

BANK. Extra Fine Assorted Polish, Silver Stamp, Conic Shape, Rubber Inserted

425.	Bank, Round, Nos. 2 and 3	.55

BANK TABLET. Rosewood Polish, Silver Stamp, Conic Shape, Rubber Inserted.



No.		Per Doz.
428.	Bank, Hexagon, Nos. 2 and 3	.55

LEDGER. Natural Polish, Silver Stamp, Conic Shape, Rubber Inserted.

932.	Ledger, Round, Natural, Nos. 2 and 3	.50

BANKERS. Natural Polish, Gold Stamp.

472.	Hexagon	.50

BLACK MONARCH. Yellow Polish, Gold Stamp.

6309.	Hexagon, 6B, thick lead	.50

HELMET. Nickel Tip, Rubber Inserted with Helmet Shield, Rosewood Polish, Silver Stamp.

3742.	Round, Nos. 2 and 3	.40

BOOK. Natural Polish, Gold Stamp.

446.	Flat	.50

TWIST. Natural Polish, Silver Stamp, Rubber Inserted Tip.

345.	Twist, Round, Nos. 2 and 3	.45

EDITORS. Natural Polish, Silver Stamp.

No.		Per Doz.
6329.	Round, Natural, Nos. 1 and 2, thick lead	.45
6359.	Hexagon, " " 1 and 2 "	.50

NATIONAL. Rubber Inserted in Wood, Gold Stamp.

362.	Round, Walnut Finish, HB	.45
392.	" Rosewood Finish, HB	.45

MERCHANTS. Removable Nickel Tip, Flat Rubber, Rosewood Polish, Silver Stamp.

396.	Round, Nos. 2 and 3	.35

CEDRIC. Removable Nickel Tip, Circular Rubber, Rosewood Polish, Silver Stamp.

3522.	Round, Nos. 2 and 3	.35

COLONIAL. Silver Stamp.

372.	Hexagon, Nos. 1, 2, and 3, Natural	.25
270.	" " 1, 2 " 3, Red	.25

BUSINESS. Silver Stamp.

320.	Round, Natural Polish, Nos. 2 and 3	.20
323.	" Black " " 2 " 3	.20
325.	" Red " " 2 " 3	.20

Plain Stamp.

No.		Per Doz.
210.	Round, Natural Polish, No. 2	.15
213.	" Black " "	.15
215.	" Red " "	.15

POCKET. Short Pointed Pencil, with Pencil Point Protector and Rubber.

150.	Round, Gilt Stamp	.50
1500.	" Plain "	.35

1511.	Round, Helmet Rubber Protector	.50

Pencil Point Protectors.

1600.	Nickel Plated, Round, 2½ inches long	.30
1611.	" " " 2½ " " Helmet	.35
1630.	" " " 3 " " Improved	.35

SPECIAL PENCILS.

SWAN. White Polish, Gold Stamp.

432.	Hexa on	.50
435.	" with gilt tip, rubber inserted	.60

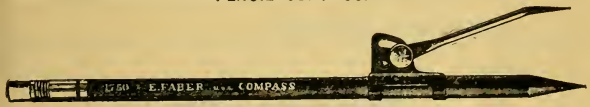
WEATHER-PROOF. Black Polish, Gold Stamp.

No.		Per Doz.
6639.	Round, Nos, 1, 2 and 3	.45

PHOTO SKETCHING PENCILS.

790.	Round, Very Soft, Soft, Medium Hard	each .10	1.00

PENCIL COMPASS.

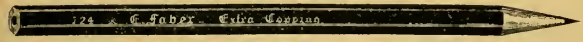


1750.	Compass with pencil	1.20
1751.	" only	1.00

SILBA. Bright Silver Finish, Rubber Inserted.

458.	"Silba," Round, Small	.40
455.	" " Large	.40
355.	" " " Twist	.50
450.	" "Conic"	.50

COPYING. Hexagon, Extra Fine, Gold Stamp.



724.	Hexagon, Violet Polish, Violet Lead	.65
725.	" Blue " Blue "	.75
726.	" Red " Red "	.75
730.	" Black " Black "	.75

Round Gold Stamp.

734.	Round, Violet Polish, Violet Lead	.35
735.	" Blue " Blue "	.40
736.	" Red " Red "	.40
740.	" Black " Black "	.40

FOR WRITING ON GLASS, PORCELAIN, ETC. Round Gold Stamp.

No.		Per Doz.
785.	Blue	1.20
786.	Red	1.20
787.	Yellow	1.20

SKIN MARKING PENCILS. For Marking on Skin, Round Gold Stamp.

795.	Blue, with nickle point protector	1.20
796.	Red, " " " "	1.20
767.	Yellow, " " " "	1.20

ARTISTS' CHALKS IN CEDAR.

779.	Round, Black, Very Soft, Soft, Medium Hard	.40
776.	" Red, " " " "	.50
780.	" White, " " " "	.40

COLORED PENCILS.

MARKING. Brown Polish, Gold Stamp, with Extra Heavy Lead.

545.	Round, Blue.	Extra Heavy Lead	1.20
646.	" Carmine,	" " "	1.50
647.	" Carmine and Blue,	" " "	1.50
685.	Hexagon, Blue,	" " "	1.50
686.	" Carmine,	" " "	1.40

EXTRA FINE. Round, Extra Fine Polish, Gold Stamp.

555.	Blue Extra	.75
556.	Carmine "	.90
558.	Green "	.75
655.	Blue, with tips	1.00
656.	Carmine "	1.00

Hexagon, Extra Fine Polish, Gold Stamp.

No.		Per Doz.
625.	Blue Lead, Extra Fine	.75
626.	Carmine " "	.75
550.	Carmine and Blue Extra, 9-in. long	1.25

FINE. Round, Silver Stamp.

633.	Brown	.70
635.	Blue	.70
636.	Carmine	.75
637.	Yellow	.70
638.	Green	.70

Hexagon, Silver Stamp.

650.	Carmine and Blue Fine, 9-in. long	1.00

Second Quality, Round, Silver Stamp.

6635.	Blue	.50
6636.	Carmine	.55

CEDAR. Round, Natural Polish.

605.	Blue	.40
606.	Carmine	.45
608.	Green	.40
675.	Blue, Extra Large, Extra Large Lead	·65
676.	Carmine, " " " "	.75

LUMBERMAN'S. Round, Extra Fine Polish, Silver Stamp.

544	Blue, Extra Large, Extra Large Leads	1.00
546.	Carmine, " " "	1.00
548.	Green, " " "	1.00
541.	Black, " " "	1.00

HEXAGON, Fine Polish, Silver Stamp.

695.	Blue, Large Leads	.80
696.	Carmine, "	.90

WHITEWOOD.

No.		Per Doz.
665.	Blue in Whitewood, Large Lead	.35
666.	Carmine " " "	.40
670.	Carmine and Blue in Whitewood, Large Lead	.40

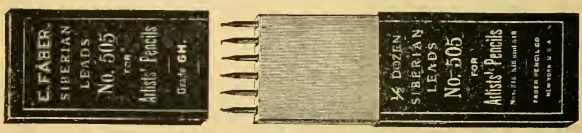
ARTIST COLORED PENCILS. Round, Extra Fine Polish, Gold Stamp, with Movable Leads.

110.	Short, Blue, Carmine or Green, 4 inches long	2.00

111.	Long, Blue, Carmine or Green, 5½ inches long	2.00
112.	Short, Carmine and Blue, 4 inches long	2.50
115.	Long, " " " 6½ " "	5.00
120.	Extra Large, Blue, Carmine, Green or Black, 6 inches long	3.50
122.	Extra Large, Carmine and Blue, 6 inches long	5.00
130.	Mammoth, Pro. and Repel, Blue, Carmine 10 Black 6 in. long	5.50
135.	Mammoth, Pro. and Repel, Carmine and Blue, 8 inches long	7.00

RE-FILL LEADS FOR ARTIST PENCILS.

BLACK LEADS.



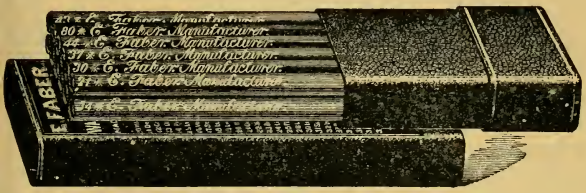
505.	Siberian for Nos. 515, 516 and 518, BB to 7 H	.50
574.	Long " 571 and 572, Nos. 1 to 6	.25
454.	Short " 576 " 2 and 3	.20

COLORED LEADS.

525.	Carmine, Blue or Green, 6 leads in a box for Pencils Nos. 110, 111, 112, 115, 135	.25
526.	Carmine, Blue, Green or Black, 3 leads in a box for Pencils Nos. 120 and 122, 1345, 1355	.25
528.	Carmine, Blue or Green, 3 leads in a box for Pencils No. 130	.20

CRAYONS.

WAX CRAYONS, Round, Extra Fine Polish, Gold Stamp, Assorted in Boxes.



No.			Per Doz.
580.	Assorted Colors, (50 shades)	each, .10	1.00
581.	6 Colors in a box		.65
582.	12 " "		1.00
583.	18 " "		1.60
584.	24 " "		2.25
585.	36 " "		3.00
586.	48 " "		3.75

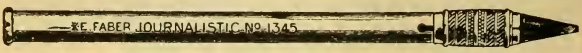
LIST OF COLORS.

10 White
11 Deep Carmine
12 Carmine
13 Dark Vermilion
14 Pink
15 Light Carmine
16 Vermilion
17 Scarlet
18 Light Vermilion
19 Light Pink
20 Brick Red
21 Orange Yellow
22 Yellow
23 Dark Yellow
24 Light Bistre
25 Flesh Ochre
26 Lemon Yellow
30 Light Sap Green
31 Sap Green
32 Light Olive Green
33 Olive Green
34 Light Green
35 Deep Olive Green
36 Green
37 Emerald Green
38 Dark Green
40 Peacock Green
41 Light Blue
42 Sky Blue
43 Blue
44 Navy Blue
45 Mazarine Blue
46 Indigo
47 Purple
48 Heliotrope
49 Violet
50 Smoke
60 Golden Brown
61 Tan Brown
62 Mahogany Brown
63 Brown Red
65 Terra Cotta
66 Burnt Sienna
67 Sepia
68 Burnt Umber
69 Olive Brown
70 Seal Brown
71 Sage Brown
80 Black

COLORED SCHOOL CRAYONS. Fine Polish, Gold Stamp.

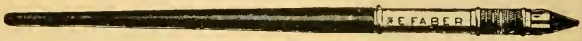
No.		Per Doz.
660.	Round, half length, asst colors, 6 in a box	1.00
662.	Round, full length, asst. colors, 7 in a box	3.00

JOURNALISTIC.



1345.	Nickel Plated Case, Movable Blue Lead	1.00
1346.	" " " " Red "	1.00
1350.	" " " " Red and Blue Lead	1.50

CHECKING.



1355-6	Nickel Plated Holders, with taper polished cedar handles, movable red or blue leads	.50

CARPENTER'S PENCILS.

WHITEWOOD.

707.	Oval, 7 inch, colored stamp	.20
709.	" 9 " " "	.30
712.	" 12 " " "	.35

CEDAR.

727.	Oval, 7 inch, plain stamp	.30
729.	" 9 " " "	.38
732.	" 12 " " "	.50

BLACK POLISH CEDAR.

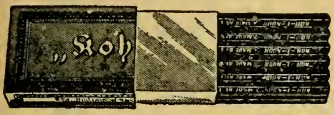
737.	Oval, 7 inch Gold stamp	.40
739.	" 9 " " "	.50
742.	" 12 " " "	.60

L. & E. Hardtmuth's Pencils.

HARDTMUTH'S NEW HEXAGON DRAWING PENCILS.

THE "KOH-I-NOOR."

FROM THE CELEBRATED MANUFACTORY AT VIENNA.



(British Graphite.)

IN SIXTEEN DEGREES.

6B—Extra soft and black.
5B—Very soft and very black.
4B—Very soft.
3B—Softer and blacker.
2B—Soft and black.
B—Black.
HB—Medium.
F—Firm, for drawing.
H—Hard, for sketching.
2H—Harder, for outlines.
3H—Hardest, for outlines.
4H—Very hard, for architects.
5H—A little harder, for architects.
6H—Still harder, for architects.
7H—Extra hard, engineers.
8H—Extra hard, for engineers.

Packed one dozen in a box as illustrated.

8H to 3B, ...	per doz., $1.20;	each,	.10
4B, ...	" 1.50;	"	.13
5B and 6B, ...	" 1.75;	"	.15

In order that the "Koh-i-noor" may be readily distinguished from any other "Drawing Pencil," it is made in special "Yellow Polish." The lead is immeasurably superior to anything hitherto produced and the grading is almost absolutely correct.

HARDTMUTH'S "KOH-I-NOOR" COPYING PENCILS.

Half Length, with Point Protector, . . per doz., $1.20; each, .10

HARDTMUTH'S COPYING INK PENCILS, in Cedar.

Put up one dozen in a box; Stamped in Silver, Violet color, ... per doz., $1.20; each, .10

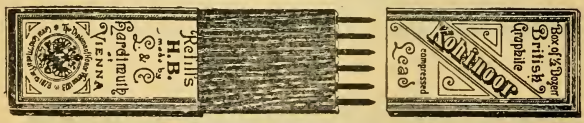
HARDTMUTH'S DIAGRAM CHALKS, in Six Colors.

In Paper Box; Assorted Colors: Green, Brown, Vermilion, Orange, Blue and Yellow, per doz. boxes, $1 80; per box, .20

HARDTMUTH'S "POLYGRADE" DRAWING PENCILS, in 12 Degrees, 6B to 6H.

Round, Natural Polish, Silver, ... per doz., .55; each, .06

HARDTMUTH'S "KOH-I-NOOR" LEADS.



In Boxes of Six Leads, 16 degrees, 8H to 6B, . . per box, .50, net.

HARDTMUTH'S "KOH-I-NOOR" ARTISTS' EVER-POINTED PENCIL HOLDERS.

Yellow Polished Wood, Gold, Gilt Metal Points, in 16 degrees, with one lead in holder, ... each, .35

HARDTMUTH'S COMPRIME LEADS.

In Boxes of Six Leads, 12 degrees, 6H to 6B, ... per box, .35

ARTISTS' TUBULAR EVER-POINTED PENCILS.

With one lead, ... each, .25

HARDTMUTH'S BEST AND FINEST GRAPHITE COMPRIME DRAWING PENCILS. Hexagon, Natural Polished Cedar.

Twelve degrees, 6H to 3B, ...	per doz.,	$1.00;	each, .10
4B, ...	"	1.20;	" .12
6B, ...	"	1.50;	" .15

HARDTMUTH'S BLACK DRAWING CHALK PENCILS OR CRAYONS, in Cedar.

Five degrees:	No. 1, Very Soft and Very Black.	No. 2, Soft and Black.	No. 3, Medium.	No. 4, Hard.	No. 5, Very Hard.

Per dozen, ... $1.00; each, .10

BLACK DRAWING CHALK HOLDERS, for Movable Leads.

Five Degrees—1, 2, 3, 4, 5, ... each .25

BLACK CHALK LEADS, to fill above Holders.

Six leads in a box, Five degrees, ... per box, .20

HARDTMUTH'S ARTISTS' COLORED WAX CRAYONS,

Or, Creta Leavis, for Drawing or Sketching.

MADE IN 48 COLORS AS FOLLOWS:

50 Chrome Yellow	66 Dark Green	82 Purple Violet
51 Gamboge	67 Sap Green	83 Vienna Lake
52 Orange Chrome	68 Leaf Green	84 Scarlet
53 Yellow Ochre	69 Emerald Green	85 Vermilion
54 Olive Green	70 Chrome Green	86 Carmine
55 Bronze Green	71 Light Green	87 Rose Madder
56 Light Brown	72 Light Chrome Green	88 Madder Lake
57 Raw Sienna	73 Mineral Blue	89 Pink Madder
58 Venetian Red	74 Sky Blue	90 Flesh Tint
59 Mars Orange	75 Cobalt Blue	91 Gray Brown
60 Vandyke	76 Mauve	92 Purple Brown
61 Cassel Earth	77 Ultramarine	93 Purple
62 Burnt Sienna	78 Dark Blue	94 Lemon Yellow
63 Sepia	79 Blue Black	95 Brown Ochre
64 Lamp Black	80 Violet Carmine	96 Florence Brown
65 Neutral Blue	81 Light Violet Carmine	97 Lilac

PER DOZEN, $1.00; EACH, 10 CENTS.

HARDTMUTH'S "NEGRO" PENCILS.

A Superior Article for Crayon Work.

Hardtmuth's "Negro" Pencil is neither a crayon, lead or wax pencil, but has all the good qualities of the three combined in one, namely: Its Lead or Composition is of a Jet Black Color, making a dead finish. Its work is clear and neat, the touch is soft, and it does not smear. On account of its good and unrivaled qualities it has been adopted by all the leading Photographers for Retouching and Spotting Platinotypes and Carbonprints, thus doing away with the brush and giving more satisfactory work. This Pencil is also used for Photographic Reproductions and Sketches, and allows in many cases more rapid work than any other pencil or pen and ink.

Try it, and you will readily appreciate its qualities.

The "Negro" Pencil is manufactured in 5 degrees, No. 1 being the softest and No. 5 the hardest grade, per doz., $1.00; each, .10

Hardtmuth's New Pliable Rubber.

Put up in One Pound Boxes, 8, 12, 16, 20, 30 or 40 pieces to the pound, . . . per pound, $2.00; per cake, .05 to .30

Dixon's Pencils.

DIXON'S FINE ROUND PENCILS.

In Eight Grades of Hardness: S—soft, to VH—very hard.

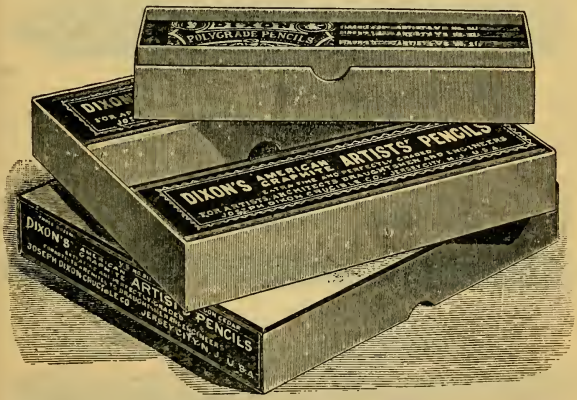
No.		Per Doz.
141 to 145,	each, .06	.50
151 to 155,	" .06	.50

DIXON'S FINE HEXAGON PENCILS.

In Eight Grades of Hardness.

			Per Doz.
122 to 126,	. . . . .	each .07	.70
126 to 170,	. . . . .	" .07	.70

DIXON'S AMERICAN GRAPHITE ARTISTS' PENCILS.



In Eleven Grades of Hardness.

210—VVS, very, very soft, to 219½—VVVH, or 6H,	each .10	$1.00

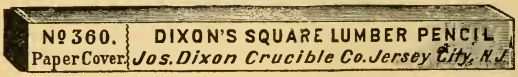
DIXON'S SKETCHING CRAYONS.

341. Round, in Cedar, a Rich Black color, . .	each .10	1.00

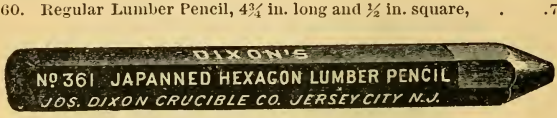
DIXON'S No. 342 CRAYONS, For Editorial, Press Room, and All Newspaper Work; Railroad, Telegraph and Express Offices.

No.			Per Doz.
342.	A Rich Deep Black color, ...	each, .10	$1.00

DIXON'S LUMBER PENCILS.



360. Regular Lumber Pencil, 4¾ in. long and ½ in. square, . .75



361.	Regular Lumber Pencil, 4¾ inch, Hexagon,				. . .	.75
496.	"	"	"	"	Yellow, .	1.00
497.	"	"	"	"	Terra Cotta,	1.00
520.	"	"	"	"	Red, . .	1.00
521.	"	"	"	"	Blue, . .	1.00
522.	"	"	"	"	Green, .	1.00

DIXON'S HIGH SCHOOL PENCILS.

980—S to 986—VH, Round, ... each, .05 .40

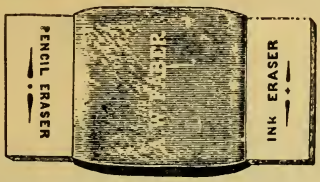
DIXON'S COLORED CRAYON PENCILS.

Round, Gold Stamp "Best."

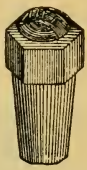
343.	Seven-inch	Brown, ...	1.00
349.	"	Red, ...	1.00
350.	"	Blue, ...	1.00
351.	"	Terra Cotta, ...	1.00
353.	"	Yellow, ...	1.00
354.	"	Green, ...	1.00
335.	"	Sepia, ...	1.00

Cheaper Grade in plain wood, all colors, ...50

Rubber, &c.



INK AND PENCIL ERASER.



RUBBER TIP.

No. 171.

A. W. Faber's Ink and Pencil Eraser, small, size of cut,		.20
" " " " mammoth size,		.35
" " Scotch Ink and Pencil Eraser,		.17
" " Rubber Tip,		.03
" " Universal Paper Cleaner,		.30
" " Ink Eraser,		.06
" " Black Gum,	.08 to	.50
" " White Rubber, best in the market,	.05 to	.50
" " Eliptic Rubber, a superior article,	.10 to	.50
" " Pencil Rubber,		.12
" " Circular Rubber,		.05
" " Combination Rubber, Ink and Pencil,		.10
Tower's Multiplex Rubber,	per pound,	$2.50
From 4 to 60 cakes to the pound,	.65 to	.05
Webster's Chalk Eraser,		.20

No. 172. Conte's Crayon and Ink Eraser, No. 1,		.12
" " " " 2,		.18
" " " " 3,		.25
French Nigrivorines, three sizes,	.06, .08 and	.10

For Steel Erasers, see Section 6.

No. 173. Sponge Rubber, 1 inch cube,		.10
" 1¾ × 1⅛ × 1 inch,		.15
" 4 × 2 × 1 "		.60
" Mammoth, 6 × 4 × 1 "		1.70
Rubber Back Glove Cleaner, 2½ × 1¾ × ⅝ "		.25
Natural Rubber,	.25 to	.40
Davidson's Velvet Rubber,	.05 to	.50
Crystal Rubber, two sizes,	each, .05 and	.10

E. FABER'S WHITE FRINGED IMPROVED ARTISTS' RUBBER.

Packed in One Pound Boxes, 4, 6, 8, 12, 16, 20, 24, 30, 40, 60, 80 to the pound, ... per pound, $2.00

BLACK VIRGIN RUBBER.

Packed One Pound in a Box, ... per pound, $3.00

RHOMBIC RUBBER.

1004. Small, First Quality, Packed One Doz. in a Box, per doz. .60
1006. Large " " " " " $1.20

PARA PENCIL RUBBER.

Packed One Pound in a Box, 12, 20, 30, 40, 60, 80 to the pound, ... per pound, 1.50

KNEADED RUBBER.

1222. Small Size, One Doz. in Box, ... per box, .60
1224. Large " " " . . . . . " 1.20

INK AND PENCIL RUBBER, in Cedar, Long.

1016.	Pencil Rubber, ...	per doz.	1.50
1017.	Ink "	"	1.50
1018.	Ink and Pencil Rubber, ...	"	1.50

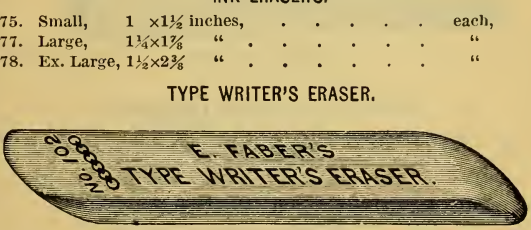
UNION INK AND PENCIL ERASER.

110.	Union Ink and Pencil Eraser, One Doz. in a Box,	per doz.	.60

INK ERASERS.

1075.	Small, 1 ×1½ inches, ...	each,	.06
1077.	Large, 1¼×1⅞ "	"	.12
1078.	Ex. Large, 1½×2⅜ "	"	.20

TYPE WRITER'S ERASER.

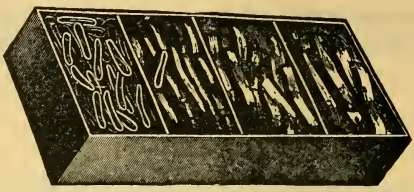


102.	Small, Double Bevel, Flat, . .	each, .06; per doz.	.60
104.	Large, " "	" .12; "	1.20

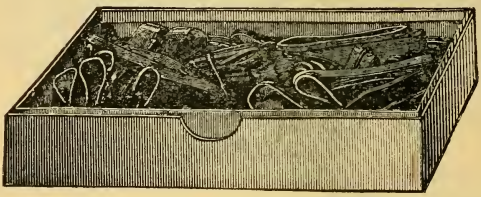
DELTA ERASERS.

1082.	Nickel Plated Mountings, . .	each, .06; per doz.	.60

Faber's Rubber Bands.



No. 100. Assorted Sizes, in Quarter Pound Boxes, . per pound, $2.50



No. 400. Seven Sizes, in Quarter Pound Boxes, . per pound, $2.50

Franklin's Lumber Crayons.

STYLE E, No. 1. Hexagon Shaped, One-half inch in Diameter, 4¾ inches Long.

No. 20.	Black, . .	per doz.	.60	No. 22.	Dark Red,	per doz.	.75
No. 21.	Blue, . .	"	.75	No. 23.	Light Red,	"	.90

STYLE F. Round.

No. 24.	Black, . .	per doz.	.50	No. 26.	Light Red,	per doz.	.65
No. 25.	Blue, . .	"	.60				

STYLE E, No. 2. Hexagon.

No. 27.	Black, . .	per doz.	.60	No. 29.	Dark Red,	per doz.	.65
No. 28.	Blue, . .	"	.65	No. 30.	Light Red,	"	.75

STYLE A. Round.

No. 40.	Black, . .	per doz.	.60	No. 42.	Red, . .	per doz.	.75
No. 41.	Blue, . .	"	.65				

STYLE B. Round.

New Era, Five Colors, ... per doz. .50

STYLE C.

Franklin's Oil Checking Crayon, Seven Colors, . . . per doz. .50

DRAWING CRAYONS. Rainbow Colors.

In Pasteboard Box, 6 Crayons, Assorted Colors, . . per box, .08
" " 12 " " . . " .15

French Stumps.

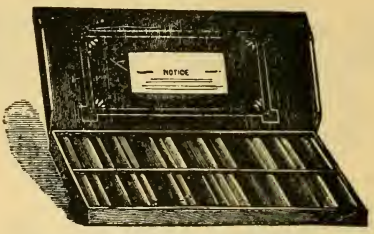
No. 174.	Chamois Stumps, 8 sizes,	.08 to .13
	" " extra large,	.15 to .25
	" " " quality,	.15 to .40
	Kid Stumps, 8 sizes,	.08 to .15
	Cork " 8 "	.08 to .15
	Paper " 8 "	.05 to .10
	" " small, 12 in a package,	.10
	Amadou,	.25
	Pith Stumps, assorted sizes,	.30 to .50

French Charcoal.

No. 175	Berville, petit, small,	50 sticks in a box,		.50
	" gros, large,	50 "	"	.45
	" hard,	50 "	"	.50
	" assorted, 4 grades,	50 "	"	.55
	Conte, Bush,	50 "	"	.45
	" Venetian,	50 "	"	.55
	" Magenta,	50 "	"	.30
	Rouget, No. 1,	25 "	"	.40
	" No. 2,	25 "	"	.40
	" No. 3,	25 "	"	.40
	" assorted,	25 "	"	.55
	Ordinary,	50 "	"	.25
	"	50 "	bundle,	.20
	Large size,	50 "	box,	.75
	Extra large size,	50 "	"	.80
	Assorted Charcoal,	No. 201,	per box,	.55
	Extra Hard Charcoal,	No. 361,	"	.65
	" " square sticks,	No. 369,	"	.55
	Prepared Charcoal, Hardtmuth's,	No. 51,	"	50
	F. B. A. Julio Charcoals, Common,		"	.25
	" " Hard Bush,		"	.45
	" " Soft "		"	.45
	" " Hard Venetian,		"	.55

Soft French Pastels.

Assorted Colors.



BOX SOFT PASTELS.

No. 176.

No. 1,	Lefranc's First Quality,	Box containing	26	Crayons,	.	.80
2,	"	"	"	42	"	.	1.10
3,	"	"	"	56	"	.	2.00
4,	"	"	"	62	"	.	2.70
5,	"	"	"	129	"	.	4.50
6,	"	"	"	156	"	.	5.50

Double and Extra Size Boxes, ranging from $8 to $15.

No. 177. Separate Pastels from 6 to 50 cents per stick, according to color.

Boxes of 26 Pastels each, containing an assortment of either Grey, Blue, Brown, Green, Yellow, etc., per box, 1.50

No. 177¼. Girault's Soft Pastels in wood boxes:

No. 1.	30 sticks,	. . . . .	per box,	.60
No. 2.	44 "	. . . . .	"	1.00
No. 3.	56 "	. . . . .	"	1.50
No. 4.	66 "	. . . . .	"	2.25
No. 5.	100 "	. . . . .	"	3.75
No. 6.	138 "	. . . . .	"	4.00
No. 6×.	164 "	. . . . .	"	6.00
No. 7.	225 "	. . . . .	"	8.00
No. 8.	390 "	. . . . .	"	12.00

No. 177½. Ralph Mengs' Dresden Pastel Crayons:

A 000.	20 sticks in a box,	. . .	per box,	.80
A 00.	35 " "	. . .	"	1.50
A 0.	50 " "	. . .	"	2.00
A 1.	80 " "	. . .	"	3.50
A 2.	126 " "	. . .	"	5.00
A 3.	192 " "	. . .	"	10.00
A 4.	360 " "	. . .	"	20.00
A 5.	510 " "	. . .	"	30.00

Shades and Tints separate, in 10 Tints, 20 crayons in a box and all colors.

Hard French Pastels.

Assorted Colors.

BOX HARD PASTELS.

No. 178.	Lefranc's First Quality:	
	Box containing 12 sticks,	.30
	" 18 "	.40
	" 24 "	.50
	" 36 "	.80
	" 48 "	1.10
	Ordinary:	
	Box containing 6 sticks,	.10
	" 12 "	.18
	Square box, " 12 "	.15

Miscellaneous.

No. 178b.	Magic Crayon Sauce,	per bottle, Net,	.10
No. 178c.	Fusian "	" "	.40
No. 178d.	Korn's Lithographic Crayons,	per dozen, "	.35
No. 179.	Conte Crayons in Cedar, or Crayon Pencils, each,		.08
	Faber's " "	" "	.06
	Gilbert's " "	" "	.10
No. 180.	Black, Square Conte Crayons, Nos. 1, 2, 3,	per dozen,	.18
No. 181.	Red or White Conte Crayons, square or round,	"	.18
No. 181½.	Crayon Sauce, small,	"	.60
	" " large,	"	1.00
No. 181¾.	Perfection Crayon Sauce,	per bottle,	.10
No. 182.	Black, Round, Varnished Crayons,	per dozen,	.38
No. 183.	American Blackboard Chalk,	"	.08
No. 184.	E. Woolf & Sons' Permanent Chalk Crayons,		.10
No. 185.	School Chalk Crayons, White,	per gross,	.30
	" " Assorted,	"	1.00
	" " Red,	"	.75
	" " Blue, Dark,	"	1.00
	" " " Light,	"	1.00
	" " Green, Light,	"	1.00
	" " " Dark,	"	1.00
	" " Vermilion,	"	1.00
	" " Yellow,	"	1.00
	" " Carmine Hexagon,	"	1.75
	" " Scarlet,	"	1.50
No. 186.	Currier's Lithographic Crayons, Nos. 1, 2, 3,	per dozen,	.35
No. 186½.	Engineers' Square Red Chalk,	"	1.00

NOTE.—Fixatif Rouget, so extensively used for fixing charcoal drawings, etc., will be found under the head of "SUNDRIES," Section 8.

SECTION VI.

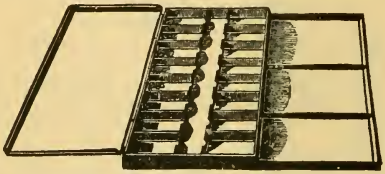
METAL & JAPANNED WARE,

COMPRISING

JAPANNED TIN WATER AND OIL COLOR BOXES, WATER AND OIL BOTTLES AND CUPS, PALETTE KNIVES, ERASERS, PORTCRAYONS, DRAWING PINS, AND METALLIC PREPARATIONS.

Winsor & Newton's

Empty Whole Pan Japanned Tin Moist Color Boxes.



WHOLE PAN BOX.

No. 187.	To contain	6 Whole	or 12 Half	Pans,	. . . . .	Net,	$1.30
	"	8 "	16 "		. . . . .	"	1.40
	"	10 "	20 "		. . . . .	"	1.65
	"	12 "	24 "		. . . . .	"	1.90
	"	16 "	32 "		. . . . .	"	2.25
	"	18 "	36 "		. . . . .	"	2.40
	"	20 "	40 "		. . . . .	"	2.60
	"	24 "	48 "		. . . . .	"	3.00

For Whole Pan Japanned Tin Moist Color Boxes, Fitted with Colors, see pages 16 and 17.

Winsor & Newton's

Empty Half Pan Japanned Tin Moist Color Boxes.

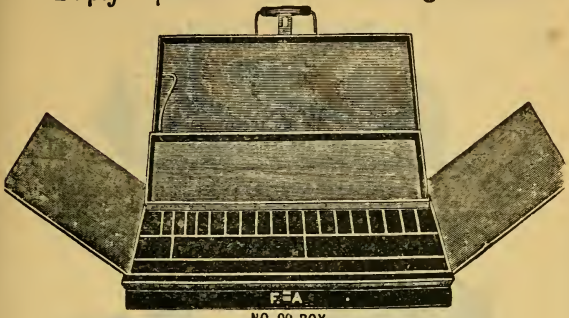
Illustrated on page 17.

No. 188.

To contain	6	Half	Pans,	Net,	$1.25	To contain	16	Half Pans,	Net, $1.90
"	8	"	"		1.35	"	18	"	" 2.00
"	10	"	"		1.45	"	20	"	" 2.10
"	12	"	"		1.55	"	24	"	" 2.30

For Half Pan Japanned Tin Moist Color Boxes, Fitted with Colors, see pages 17 and 18. Frost & Adams' Empty Japan Boxes about 10 per cent. less than above.

Empty Japanned Tin Oil Sketching Boxes.



NO. 00 BOX.

No. 189. No. 1. "Eclipse." 9×13 inches and 4¼ inches deep, with raised cover. Fitted with new receptacle for tubes, and also provided with an extra tube tray and a tray for holding *wet* brushes. When this box is closed, no matter in what position it may be carried, the contents cannot be displaced. . . 2.25

No. 2. "Eclipse." 9¾×13½ inches, and 3¼ inches deep, with flat cover. Fitted exactly the same as the "Eclipse" No. 1, with the addition of a Double Bottom and Slide for sketches. 2.50

No. 00. Empty Japanned Tin Sketch Box, arranged for Palette, Brushes, Oils, etc., with Inside Flaps and Tray over the Colors to keep them from shaking about, size 10 × 14, . . . $2.25

No. 0. Empty Japanned Tin Sketch Box, same as No. 00, with Inside Flaps over Colors only, size 9¼ × 13½, ... 2.15

No. 1. Empty Japanned Tin Sketch Box, arranged for Palette, Colors, Brushes, Oils, etc., Bottom Compartment for Mill Boards, size 10 × 14, ... 2.00

No. 1-F. Empty Japanned Tin Sketch Box, same as No. 1, with Inside Flaps over the Colors, ... 2.15

No. 2. Empty Japanned Tin Sketch Box, same as No. 1, without the Compartment for Mill Boards, size 9¼ × 13½, . . . 1.85

No. 3. Empty Japanned Tin Sketch Box, arranged for Palette, Colors, Brushes, Oils, etc., size 9 × 13, ... 1.65

No. 4. Empty Japanned Tin Sketch Box, a very compact Box, size 7½ × 11, ... 1.50

No. 5. Empty Japanned Tin Sketch Box, arranged with Tray for Moist Water Colors or China Colors, size 5¾ × 8, . . 1.75

No. 6. Tourists' Empty Japanned Tin Sketch Box very light and compact, 5½ × 9½, ... $1.25

No. 7. Empty Japanned Tin Sketch Box, arranged for Palette, Colors, Brushes, Oils, and has a Tray over the Colors. Size 6 x 13, ... 1.75

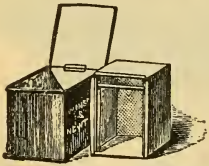
No. 8. Empty Japanned Tin Sketch Box, arranged to hold 36 Tubes of China Color, with Space for Brushes, and a Box of Roman Gold. Size 6 x 11½ 1.25

No. 9. Empty Japanned Tin Sketch Box, 8 x 12 and 3 inches deep. This box holds the No. 8, and has space for the Rags, Brushes, &c. in the bottom. 3.00

For Fitted Oil Sketching Boxes, see page 35.

Tin Ware Sundries.

IMPROVED SMUTCH AND RAG PAN.

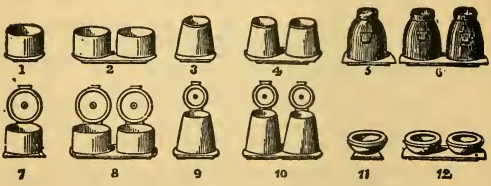


IMPROVED JAPANNED BRUSH CLEANER.

JAPANNED BRUSH WASHER.

No. 190. Winsor & Newton's Japanned Flat Oil Bottles, with Screw Tops, each, ...80
Japanned Flat Oil Bottles, with Screw Tops, Thin, . each, .60
Winsor & Newton's Brush Washers, ... " .65
" " " Japanned, . . " .80
Brush Washers, Ordinary, ... " .33
" " with Cover, . . . " .42
Winsor & Newton's Improved Brush Cleaners, . . " .85
" " " " Japanned, " 1.15
" " Smutch Pans, 14 inches long, . . " 1.15
" " Improved Smutch and Rag Pans, 14 inches long, each, ... 1.50
American Improved Smutch and Rag Pans, 14 inches long, each, 1.25

Oil and Water Color Cups.



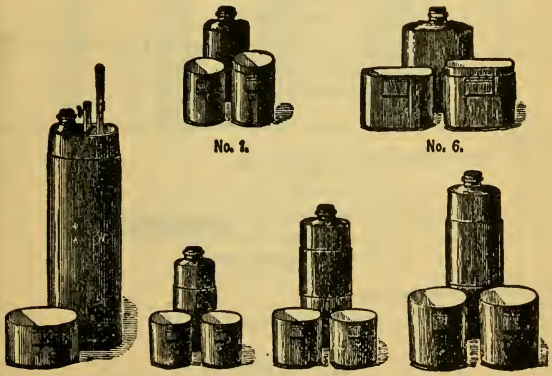
				Plain.	Japanned.
No. 191.	No. 1.	Winsor & Newton's Tin Palette Cups, .	each,	.10	.20
	2.	Ditto, Double, ...	"	.20	.40
	3.	Conical Tin Cups, ...	"	.	.08

				Plain.	Japanned.
No. 191.	No. 4.	Conical Tin Cups, Double,	each,		.10
	5.	Winsor & Newton's Water Color Cups, with necks for corks	"		.30
	6.	Ditto, Double,	"		.60
	7.	Winsor & Newton's Capped Tin Cups,	"	.30	
	8.	Ditto, Double,	"	.60	
	9.	Capped Conical Tin Cups,	"		.10
	10.	" " Double,	"		.15
	11.	Winsor & Newton's Improved Cups, with moveable rims,	"	.20	.40
	12.	Ditto, Double,	"	.40	.80

Winsor & Newton's

Japanned Water Bottles,

With Cups to contain the water when in use.

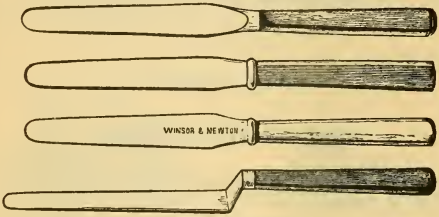


No. 192.	No. 1.	Round Japanned Tin Water Bottle and Cups, 3½ × 1½ inches,	Net, $1.00
	No. 2.	Sketcher's Japanned Tin Water Bottle and Brush Case complete, 8 × 2¾ inches; the brushes being held by elastic bands cannot be injured at their points,	2.80
	No. 3.	Small Oval Japanned Tin Water Bottle and Cups, 3¾ × 1½ inches,	1.30
	No. 4.	Middle Oval Japanned Tin Water Bottle and Cups, 5¼ × 1¾ inches,	1.50

No. 192. No. 5. Large Oval Japanned Tin Water Bottle and Cups, 6¼ × 2 inches, ... $1.80
No. 6. Flat Oval Japanned Tin Water Bottle and Cups, 3¾ × 2½ inches, ... 1.75

Frost & Adams Co's

Steel Palette and Gilders' Knives.

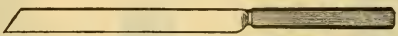


PALETTE KNIVES.

			3 inch.	3 1-2 inch.	4 inch.	4 1-2 inch.	5 inch.
No. 193.	No. 1.	Cocoa or Ebony handle,	.25	.25	.30	.35	.35
	2.	Ditto, balanced, . .	.35	.35	.40	.45	.45
	3.	Ivory handle, balaneed,	.80	.85	.95	1.05	1.15
	4.	Cocoa Trowel, . .	.40	.50	.55	.60	.65

A large variety of French Palette Knives, very flexible, and suitable for applying color.

No. 194. Pocket Palette Knives, Pearl Handle, ... $1.25
" " Shell " 1.00
" " Ivory " 75



EXTRA GILDERS' KNIFE.

No. 195. 6 inch Blade, Cocoa Handle, ...50

Portcrayons.

No. 196. Common Brass, 4 to 6 inches long, ...05 to .10
Washed or Plated, 4 to 6 inches long, ...08 to .15
Conte Portcrayons, Hollow Cedar Centres, ...20
" " Ebony, Plated Ends, ...30

Pencil Sharpeners.

No. 197. Fisher's Jack Plane Pencil Sharpener, ...25
Condon's Pencil Sharpener, ...25

No. 197. Files for pointing pencils, 5 inch, all steel, ...17
" " 3 " on Wood Handles, . .25
Sand Paper Blocks for pointing lead pencils, 1½ × 3 inches, .10
" " " 1½ × 4 " .12
" " " 1½ × 4 "
on Wood Handles, ...15

Frost & Adams Co's

Scrapers and Erasers.

1. 2. 3. 4. 7.

No. 198. No. 1. Plain Steel Oil Color Scraper, ...25
2. Steel Oil Color Scraper, Ebony Handle, . . 1.00
3. Illuminating Eraser, Cocoa Handle, ...40
4. Ebony Handle Eraser, ...55
7. Fine Eraser, Ivory Handle, ...75
Ordinary Eraser, Cocoa Handle, ...40
" Bone " 50
Curved Erasers, Cocoa " 50

Drawing Pins or Thumb Tacks.

No. 199. Brass Tacks, Steel Points, 3-8 inch diam., per dozen, .20 to .35
German Silver, Steel Points, either Round or Beveled Heads, 5-16 inch diam., per dozen, . .25
Ditto, 3-8 inch diam., ... " . .28
Ditto, 7-16 " . . . . " . .30
Ditto, 1-2 " . . . . " . .35
Ditto, 9-16 " . . . . " . .45
Ditto, 5-8 " . . . . " . .55

No. 199.	German Silver, Steel Points, screwed in and riveted, either Round or Beveled Heads, 3-8 inch diam.,	per dozen,		.45
	Ditto, 7-16 inch,	"		.60
	Ditto, 1-2 "	"		.70
	Ditto, 9-16 "	"		.80
	Solid Steel Tacks, 5-16 "	"		.25
	" " Fine, 5-16 "	"		.75

English Best of All Thumb Tacks, with Handles. New.

		Per dozen.			Per dozen.
No. 1.	Brass, large,	.50	No. 1.	Ger. Silver, large,	.75
2.	" medium,	.40	2.	" medium,	.65
3.	" small,	.35	3.	" small,	.55

Frost & Adams Co's Stamped Steel Tacks.

5-16 inch,	per gross,	.80	per dozen,	.10
3-8 "	"	1.00	"	.12
1-2 "	"	1.20	"	.15

Perfection Thumb Tacks.

No. 1.	German Silver,	per gross, $1.15	per dozen,	.15
2.	"	" 1.25	"	.20
3.	"	" 1.50	"	.25
No. 1.	Brass,	" 1.00	"	.12
2.	"	" 1.10	"	.18
3.	"	" 1.25	"	.20

Nickeled Tacks, No. 1350,	per gross,	1.00	per dozen,	.15
Brass Tacks, No. 1351,	"	.90	"	.12

McGill's Patent Paper Fasteners.

Regular Sizes. Round and Flat Heads.

No. 200.			Round Head.	Flat Head.
No. 1.	Per 100,	Net,	.35	.25
2.	"	"	.38	.27
3.	"	"	.40	.30
4.	"	"	.45	.35
5.	"	"	.85	.60
6	"	"	1.00	.70
7.	"	"	1.20	1.00
8.	"	"	1.60	1.40
9.	"	"	2.40	2.00

Metallic Preparations.

SHELL

SAUCER.

CAKE.

No. 201. Gold Shells, ... each, .20
Silver " . . . . . " .10

No. 202.

Gold Saucers, 1	inch,	each,	.25	Silver Saucers, 1	inch,	each,	.15
" 1½	"	"	.35	" 1½	"	"	.25
" 2	"	"	.50				

Wolff's Gold Saucers, small, .25; Large, .40.

Cakes.

No. 203. Fine Gold, in Porcelain Pans, ... $2.25
Aluminium " " 45
Silver " " 45
Pure Gold in Cakes, cheap, Woolf's.

Bronze.

No. 204.

No. 500,	. . . .	per oz.,	.08	No. 5,000,	. . .	per oz.,	.18
800,	. . . . .	"	.10	6,000,	. . . .	"	.20
1,000,	. . . . .	"	.10	Finest French,	. . .	"	.40
2,000,	. . . . .	"	.12	" Silver,	. . .	"	.25
3,000,	. . . . .	"	.15	No. 6,000 Silver,	. . .	"	.20
4,000,	. . .	"	.16				

Gold Leaf furnished to order.

Foil or Tinsel.

No. 205.

White, 4½ × 10½ in.		per doz.,	.60	Red, 4½ × 10½ in.		per doz.	.80
Green,	"	"	.80	Yellow, "	"	"	.80
Blue,	"	"	.80				

Gold Paints.

No. 206. Bessemer's small bottle Bronze, with Liquid Preparation . . .45
" large " " . . .60
" large bottle Liquid Preparation, ...20
Marsching's, Meir's, Dent's and Royal Gold Paints.
Williams' and Ruby's Gilding.
Marsching's Silver and Royal Silver Paints, constantly on hand.

Gold Ink.

No. 207. Winsor & Newton's Gold Ink, warranted to burnish bright, ... per bottle, .35
Leroux's Gold or Silver Ink, . . . " .35
Frost & Adams Co's Columbia Gold Ink, . " .25
Ruby's Gold Ink, ... " .25

SECTION VII.

ARTISTS' EASELS,

SKETCHING UMBRELLAS, SKETCHING STOOLS, DRAWING BOARDS, SKETCHING BOXES, PALETTES, MAHL STICKS, &c.

Sketching Easels.

DRAWING BOARD EASEL.

No. 208. Patent Drawing Board Easel, ... $3.50
" " including Imperial Drawing Board with Moveable Shelf, ... 4.25

NOTE.— The Patent Drawing Board Easel is a very convenient arrangement in drawing from life or from the flat. It is made of wood, and is exceeding light, strong and durable. Owing to its compact form, it serves a good purpose for clasess, and is also very convenient for office or studio.

Frost & Adams Co's

Easels for Out-Door Sketching.

SKETCHING EASEL, NO. 209.

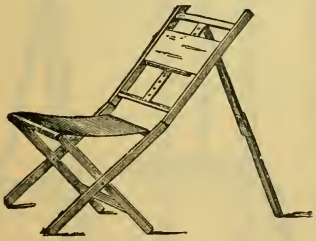
SKETCHING EASEL, NO. 211.

No. 209. Plain Sketching Easel, of Hard Wood, to Fold, ... $1.00

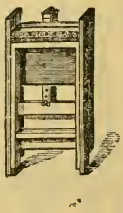
No. 209½. Same as No. 209, with Jointed Legs, ... $1.25

No. 211. French Sketching Easel, of hard wood, very compact; dimensions when folded, 29 × 2 × 2 inches, ... $3.00

No. 211½. French Sketching Easel, same as above, with sliding legs so it can be fitted to an uneven surface. . . . . .



NO. 212, OPEN.



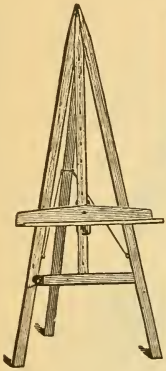
NO. 212, CLOSED.

No. 212. Sketching Seat and Easel combined, ... $4.00

No. 213. Black Walnut Table Easel, ... $2.75

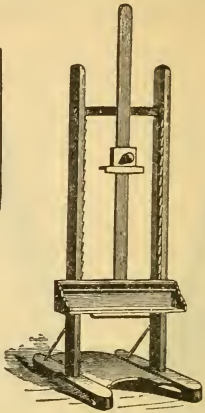
NOTE.—The Sketching Seat and Easel combined, No. 212, represented in above cut, is made of hard wood, and when folded occupies a space 27 × 14 inches; weight 6 lbs. 8 oz.,

Studio Easels.

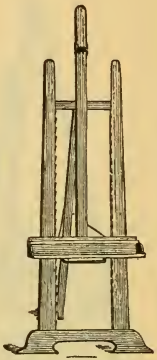


PAT. FOLDING EASEL NO. 222a.

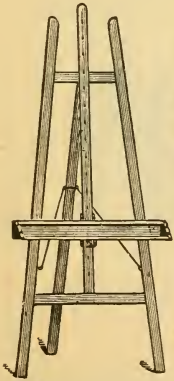
Shelf No. 1.



PAT. UPRIGHT EASEL NO. 215.

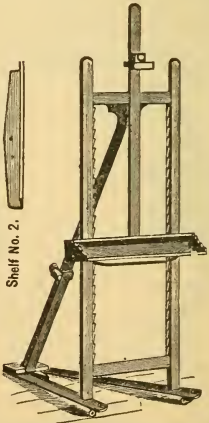


PAT. RACK EASEL NO. 216.



PAT. RACK EASEL, NO. 217.

Shelf No. 2.



PAT. RACK EASEL, NO. 221.

PAT. FOLDING EASEL, NO. 222.

No. 214. Frost & Adams' Black Walnut Rack Easel, same as No. 221, without base, ... $8.00

No. 215. Frost & Adams' Black Walnut, Upright Easel, with Patent Ratchets for regulating Shelf, ... $15.00

No. 215. Ditto, with Incline, ... $17.50

No. 216. Frost & Adams' Black Walnut Easel, with Patent Ratchets and Brace, ... $6.00

No. 217. Frost & Adams' Black Walnut Easel, with Patent Brace, and either style of Shelf, No. 1 or No. 2, ... $4.25

No 218. The same as No. 217, without Patent Brace, ... $4.00

No 219. The same as No. 218, in Pine, ... $2.50

No. 220. The same as No. 219, with Patent Brace, ... $2.75

No 221 Frost & Adams' Black Walnut Rack Easel, with Base on Castors, and Patent Ratchets, ... $9.50

No 222. Frost & Adams' Black Walnut, Folding Easel, with Patent Brace, ... $2.25

No 222*a*. The same as No. 222, with Cross Bar, and Patent Sliding Shelf. $3.50

No. 222*b*. The same as No. 222*a*, in Pine, ... $2.25

No. 223 The same as No. 222, without Patent Brace, ... $2.00

No 224. The same as No. 222, in Pine, with Patent Brace, ... $1.75

No. 225. The same as No. 224, without Patent Brace, ... $1.50

Pine Easel, 3 pieces, to fold, ... 90

NOTE.—The Easels Nos. 208, 214, 215, 216, 221 have the patent combination of ratchets, pawls and lever for regulating height of shelf. This combination is of iron, very light, firm and durable.

The Easels Nos. 214, 216, 217, 222 222*a*, 222*b* have the patent brace applied in different ways. The need of some support of this kind has long been felt, especially in light Easels, where a slight blow upon the rear leg, or an accidental knock against the Easel would cause it to spread apart or topple over. This brace obviates all difficulties of this kind, will brace the Easel firmly at any angle, and does not interfere with closing it together.

Letters Patent have been granted for above improvements under date of June 5th, 1877, and May 27th, 1879.

French Studio Easels.

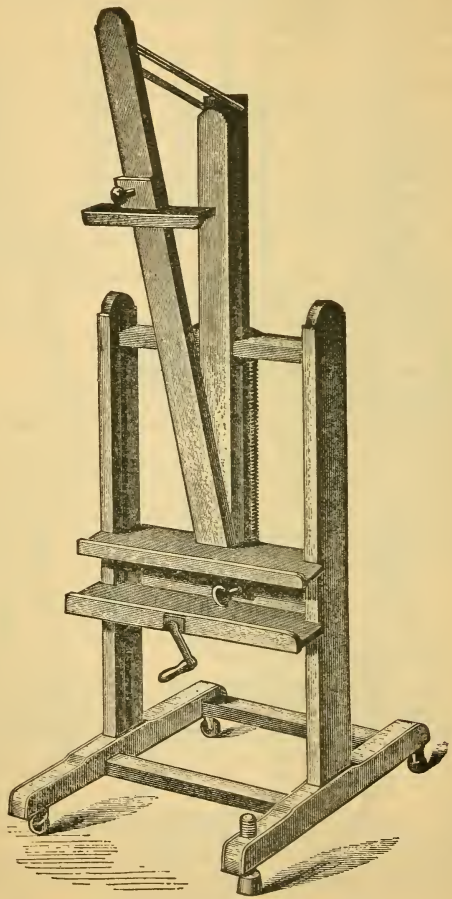
No. 226 French Studio Easel, Black Walnut, with Iron Screw and Crank for raising Shelf, 25 × 64 inches, ... $45.00

No. 227 French Studio Easel, Black Walnut, with Iron Screw and Crank for raising Shelf, with System of Incline, 25 × 64 inches, . $50.00

No. 228 Double or Reversible Easel, the same as No. 227 except that it has an Extra Shelf on the opposite side, and the manner of raising the Shelves is by the Patent Combination of Ratchets, Pawls and Lever. One side of Easel can be inclined like No. 227, ... $35.00

NOTE.—The Upright Easel, No. 215, and the French Studio Easels, should either of them be required for use upon an uneven floor, can be leveled by a thumb-screw attached to the front, right-hand castor.

Any of the French Studio Easels, described above, can be furnished at much less cost by using the patent combination of ratchets, pawls, and lever, instead of the iron screw and crank, for regulating height of shelf.

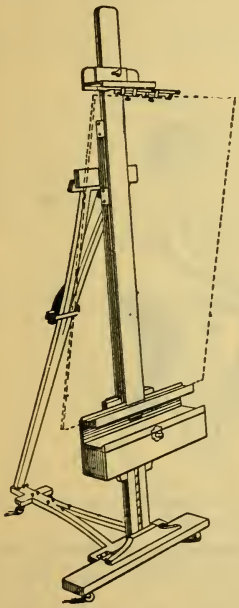


FRENCH STUDIO EASEL WITH INCLINE, NO. 227.

The Cross Studio Easel.

Patented.

This easel will incline a canvas 8 feet high. The shelf is balanced by a weight, and is kept from dropping by a spring catch working upon an iron ratchet. The base is hinged, and the whole may be closed into a small space. The upright may incline, as in illustration, or at a slight angle forward, and at two positions between, and by an arm hinged to the head any slight change in inclination may be given to the picture. Made of cherry, and oiled. Price, $25.00.



The Cross Sketching Easel.

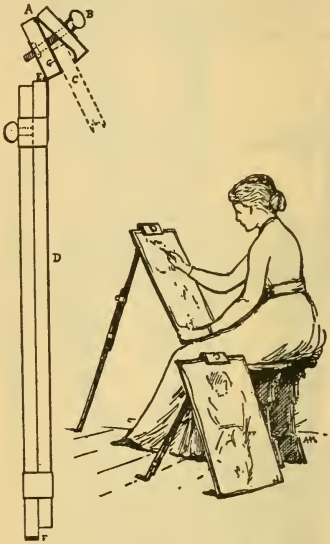
Patented, United States and France. Received Medal of M. C. M. A., 1887.

The simplest, strongest and most practical easel ever made. Now used by all the leading French and American artists. The only easel in which the canvas gives firmness to the easel, which inclines the canvas forward, and which carries any canvas up to 5 feet, high enough to work upon while standing.

No. 1. 36 Inches long, closed, weighs 3¼ lbs. Price, $5.50.
No. 2. 29 Inches long, closed, weighs 2¼ lbs. Price, 4.50.

Munsell's Portfolio Brace.

Patent Applied For.



Size, 34 in. long folded; 60 in. long open. Weight, 17 ounces. Price, $2.00.

The lightest and most economic easel in the market.

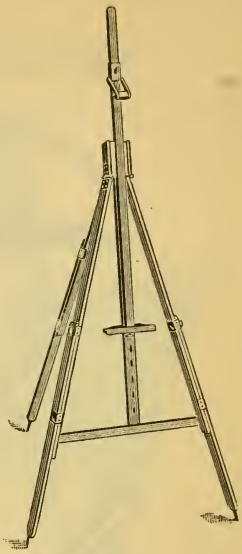
The only practical form for crowded classrooms, allowing nearly double the number of students possible with other forms of easel. Takes as much room as a cane when leaned in the corner or hung on a nail. *Simple. Strong. Durable.*

The most portable of sketching easels for outdoor work. Does away with thumb tacks or other means of holding the paper. Can be clamped to the cross-bar of large canvases for cartoons and large work.

Description.

It consists of a head or clamp (A), with thumb-screw (B), adapted to hold firmly the edge of a portfolio, canvas or drawing-board (C), whose lower edge rests on the knees, floor or other support, and an adjustable leg (D), which is hinged (E) to the head so as to permit of any desired height or inclination, while a rubber tip (F) prevents slipping on the floor, and a strip of rubber (G) in the clamp holds firmly the upper edge of the portfolio, and any paper or canvas thereon.

The Improved Sketching Easel.



This is one of the simplest, strongest and firmest Easels on the market today.

It is made of cherry, nicely finished, with brass mountings and sliding legs.

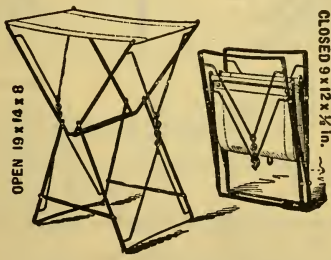
When shut up in its most compact form it is 31 inches long and weighs 3½ pounds.

It can be opened so that it will stand six feet high, and is so made that the side legs are a support to the canvas when painting, and the device for holding and inclining the canvas at the top is very ingenious and practical.

Price, ... net, $3.50

The Portfolio Camp Stool.

The Friend of the Weary.

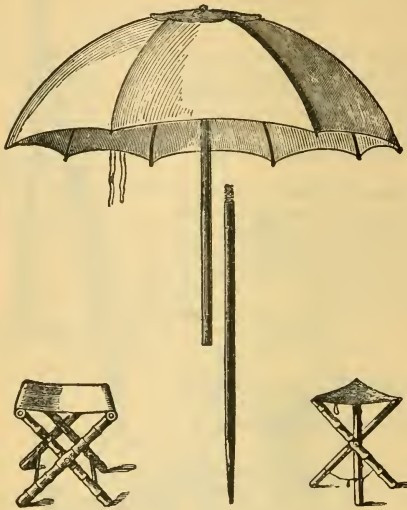


Unique, strong, compact; easily handled and carried; it cannot get out of order. Invaluable for *Artists and Amateurs*, Sportsmen, Tourists, Baseball Grounds, Race Tracks, Excursionists; in fact for all. It is made of steel and it only weighs about two pounds.

Japanned, in box, ...	$1.50 each
Nickel Plated, in box, ...	2.25 each

Sent by express on receipt of price.

Sketching Umbrellas and Seats.



SQUARE FOLDING SEAT. CLUB SEAT.

French Sketching Umbrellas.

No. 229.	With Cane Mountings, Jointed Stick,	28 inches.			$8.50
	" " "	30	"		9.50
	" " "	36	"		10.50
	" " "	38	"	extra quality,	15.00

For American Sketching Umbrellas and Sketching Staff, No. 758, see page 151.

French Sketching Seats.

No. 230.	Club Seat, 1st quality,	$2.25
	" 2d "	2.00
	Cane Seat, 2d quality,	2.25

American Sketching Seats.

No. 231.	Club Seat, Light,	$1.00
	Cane Seat,	1.50
	Square Folding Seat, Linen Cover,	1.00
	" " Carpet "	1.50
	" " Canvas "	.40
	" " " with Back,	.50

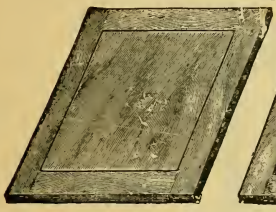
French Mahl Sticks.

No. 232.	White Wood, 30 to 40 inches long,	.20
	Stained and Varnished, 30 to 40 inches long,	.30
	Jointed Wooden, Brass Ferrules,	.75
	Bamboo, 30 to 40 inches,	.30

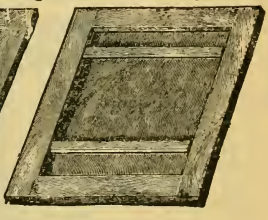
Frost & Adams Co's

Drawing Boards, &c.

Framed Drawing Boards.



FRONT VIEW.

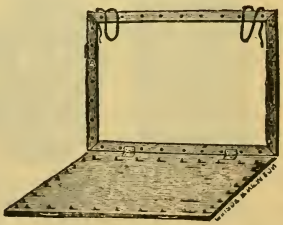


BACK VIEW.

No. 233.	Imperial,	22 × 30 inches,	$2.25
	Half Imperial,	16 × 22 "	1.75
	Quarter "	11 × 16 "	1.50

NOTE.—The frames of the above Boards are made of hard wood, the panels of pine, all from thoroughly seasoned stock

PLAIN DRAWING BOARD, NO. 234.



MAHOGANY SKETCHING BOARD, NO. 235.

Plain Drawing Boards.

No. 234.

Double Elephant, 28×41,	$2.00	Half Imperial, 16×22	$ .90
Imperial, 23×31,	1.25	Half Royal, 14×18,	.80
Royal, 18×24,	1.00	Quarter Imperial, 11×16,	.60

Winsor & Newton's Mahogany Sketching Boards.

NOTE.—A very light and portable contrivance, being a thin Mahogany Board with iron pins inserted, over which several sheets of damped paper can be placed; and a slight frame with pin-holes being then shut down upon them, they are firmly held while drying, and when dry. The sheets of paper are thus strained ready for use, with great facility and cleanliness.

No. 235.	Clamped, Quarter Imperial, 15 × 11 inches,	$2.50
	" Half " 22 × 15 "	4.75
	Best Framed, Brass Bound, Quarter Imperial,	3.38
	" " Half "	5.50

Frost & Adams Co's

Manikins, or Lay Figures.

No. 236.	6 inch, Hard wood,	$1.50
	9 " "	2.00
	12 " Pine Wood,	2.00
	18 " "	4.00
	24 " "	6.00
	30 " "	9.00
	36 " "	15.00
	42 " " Fingers Moveable,	28.00

Frost & Adams Co's

Palettes for Oil Painting.

		Oiled Mahogany.	Polished Mahogany.	Oiled Walnut.	Polished Walnut.	Polished Satin Wood.
No. 237	9 inch,	.30	.60	.30	.60	.65
	10 "	.35	.70	.35	.70	.75
	11 "	.38	.80	.38	.80	.85
	12 "	.40	.90	.40	.90	.95
	13 "	.40	1.00	.40	1.00	1.05
	14 "	.45	1.10	.45	1.10	1.10
	15 "	.50	1.20	.50	1.20	1.20
	18 "	.90	1.40	1.00	1.40	1.50

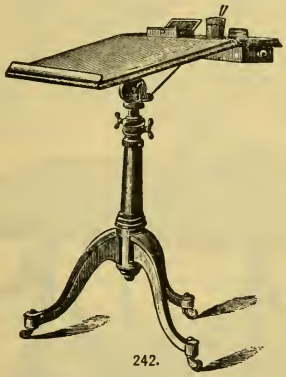
Rubens' Palette, 26 inch, $2.50; Leaded and Balanced, ... $3.00

French Sketching Boxes.

Made of Walnut, for Landscape Painting, Interior Fitted in Tin, with Palette, Oil Bottles, &c.

No. 238.	Size, 14 × 17 inches,		$5.50
"	11½ × 15 "		4.75
"	10½ × 14 "		4.50
"	6½ × 10¼ "	Fortuny Thumb-Hole Box,	5.25
"	5¾ × 9½ "	" " "	4.25

Patent Adjustable Drawing Table.



242.

NOTE.—This Table is designed for Draughtsmen and Artisans generally. It can be raised to any convenient height, either for sitting or standing; and can be readily fixed at any desired inclination, while the instrument shelf and drawers will always remain level. The top can be allowed to rotate, if desired, or firmly fastened.

No. 239. Drawing Table, Plain, Soft Wood Top, 22 × 24 inches, Iron Stand, no Instrument Shelf, suitable for schools, shops, etc., $8.00

No. 240. Drawing Table same as No. 239, with Instrument Shelf 7 × 19 inches, Iron Stand, no Drawers, ... $9.00

No. 241. Drawing Table, Black Walnut Top 22 × 26 inches, Instrument Shelf 7 × 26 inches, Iron Stand, no Drawers, ... $10.00

No. 242. Drawing Table, Black Walnut Top 22 × 26 inches, Instrument Shelf 7 × 26 inches, Two Instrument Drawers, Ornamented Stand Mounted on Castors, ... $12.00

No. 243. Same as No. 242, with extended Lever for adjusting inclination of Top, ... $13.00

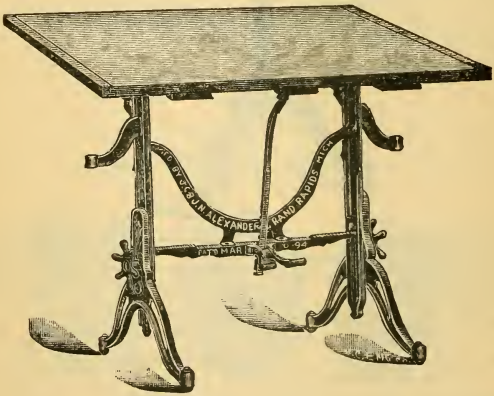
No. 244. Same as No. 242, Top of Selected, Polished Walnut, Iron Stand, Bronzed and tastefully ornamented, ... $15.00

Fry's Patent Draughting Table,

For Architects, Engineers and Draughtsmen.

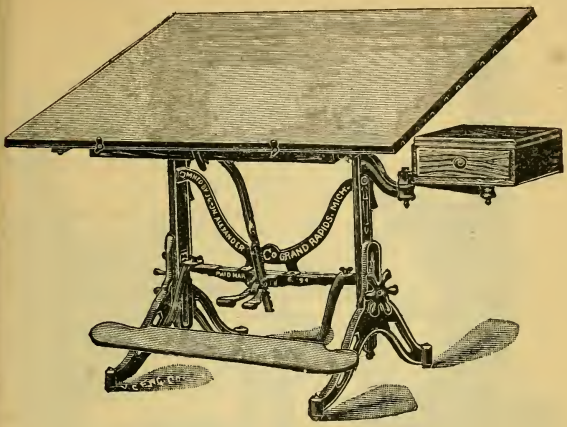
Frost & Adams Co., New England Agents.

These Tables are rigid and firm in all positions and the adjustments are simply and quickly made. The tops are finished drawing boards and constructed in the best possible manner, allowance being made for contraction and expansion. Balance of the wood work is of oak and nicely finished. The frames are black enameled with bronze trimmings.



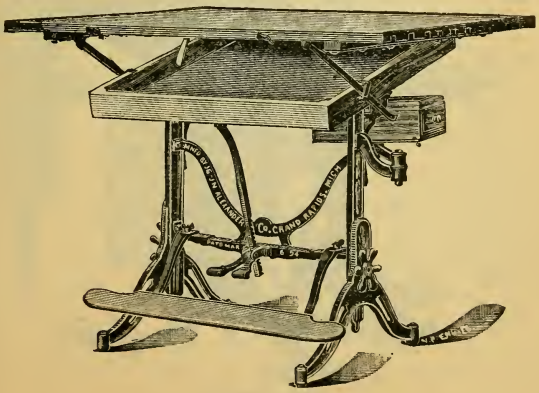
Style A. Size 1.

Style A Tables are suitable for work requiring the draughtsman to work from one side only, are adjustable for height and can be placed at any incline. They make a satisfactory table at a low price. We recommend these for schools and colleges.

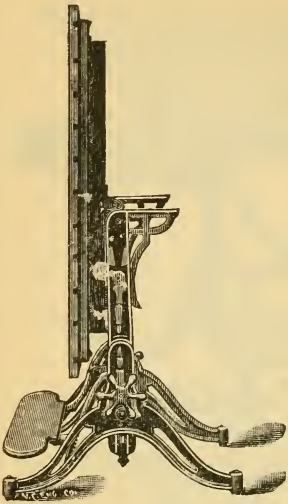


Style B. Size 2.

Style B Tables are complete with foot rest, swing instrument drawer, and sketch box, and have adjustment for inclining to either side; the top can be raised, as shown in cut, without raising frame. They are suitable for sketch work, perspective and careful work.

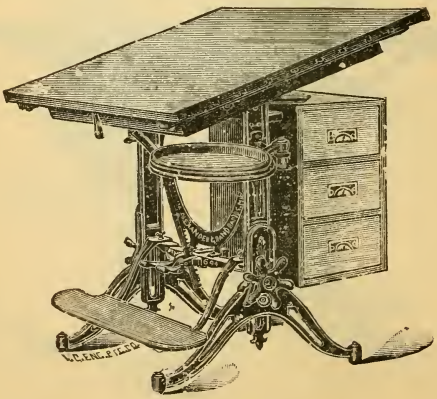


Style B. Size 2.

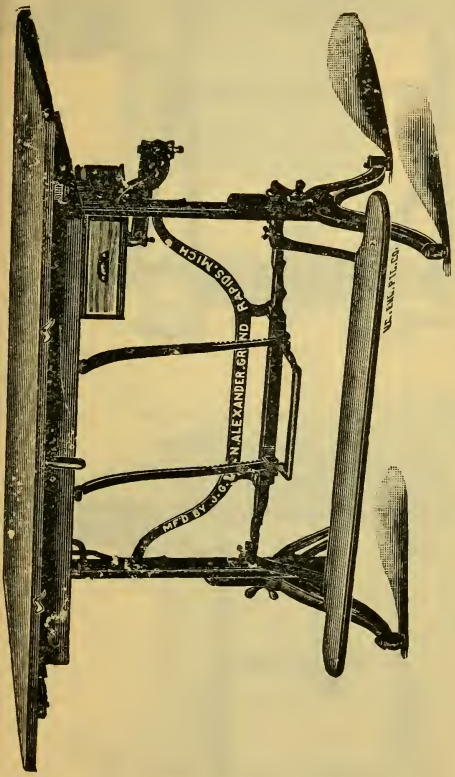


This cut represents the tables folded, to set one side when not in use, which is a great convenience.

Style C Table, combining as it does all the advantages of the B Table, with a cabinet or case in the rear of the frame, makes a most complete office or home fixture. The cabinet may be varied in size and shape to suit the individual; Drawers to pull from either or both ends or the rear.

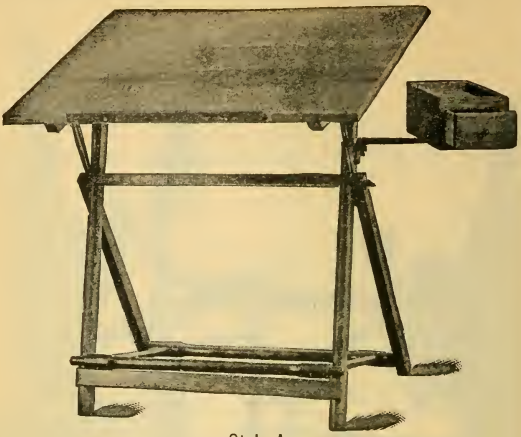


Style C. Size 1.
87⅜



Style B. Size 4.

The above shows the construction of the frame in the larger tables. All sizes in any style above No. 2 are so made and while they are adjusted in the same manner, give all the strength and firmness of the smaller sizes. They are specially adapted for the work of engineers, map makers and for large detail work.

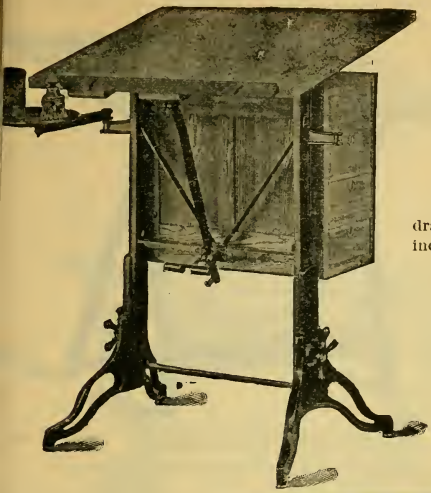


Style A.

Top 24 x 30	. . . . .	$12.00
" "	with Drawer 4 x 10	13.50
" "	with Cabinet of 4 drawers, 4x10 and Tray .	17.00

Style B.

Top 24 x 30, Drawer 4 x 10	. . . . .	$20.00



Style C.

Cabinet of Four drawers 8½×19, 3½ inches deep.

Style E. Four drawers, 19x28.

Folding Drawing Table.

Cut at left shows above table when folded.

Finding call for a light, adjustable table, we are prepared to furnish the above tables of any size, for use either as a drawing or reference table; well braced and substantially made. Can be folded and moved without inconvenience.

Net Price List.

		Style A.	Style B.	Style C.	Style E.
No. 1.	32 × 42 inches, . .	$15.00	$25.00	$32.50	$35.00
2.	37 × 48 " . .	20.00	30.00	37.50	40.00
3.	37 × 60 " . .	25.00	35.00	42.50	45.00
4.	40 × 72 " . .	30.00	40.00	47.50	52.50
5.	40 × 84 " . .	40.00	50.00	57.50	63.00
6.	42 × 96 " . .	45.00	55.00	62.50	70.00
7.	48 × 120 " . .	55.00	70.00	77.50	80.00

By adding, or deducting from the above styles the several conveniences, a table may be made to suit all requirements, as follows:

Foot Rest, ...	$1.50	Cabinet 12 × 16 × 20, 3 or 4 drawers, ...	$7.00
Circular Swing Tray, .	2.00		
Drawer and Swing Tray, .	3.00		

Folding Drawing Tables.

No. 1.	24 × 36 inches, 29 inches high, ...	$3.50
2.	32 × 42 " 38 "	6.00
3.	37 × 48 " 38 "	9.00

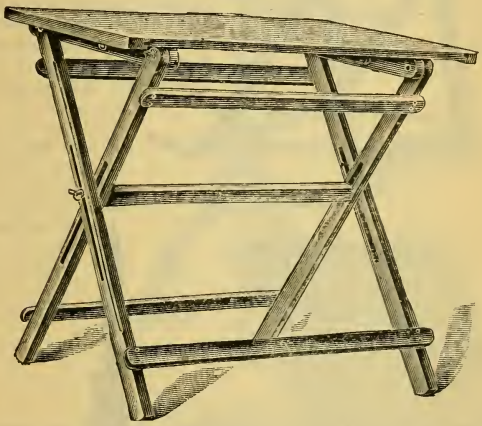
All tables have hardwood base and pine top. Special size made to order.

Draughting Table Tops.

Our table tops are finished with cherry edge put on by our improved method, and hardwood ledges on the back, allowance being made for all contraction and expansion, finished, ready to put on frame.

32 × 42 inches,	.	each,	$8.00	37 × 60 inches, .	each, $10.00
37 × 48 "	.	"	9.00	Larger sizes made to order.	

The Normal Adjustable Drawing Table.



The Normal Adjustable Drawing Table can be raised, lowered or set at an inclination instantly by loosening the nut of the central rod, which moves in slots of the legs, as readily seen from the illustration.

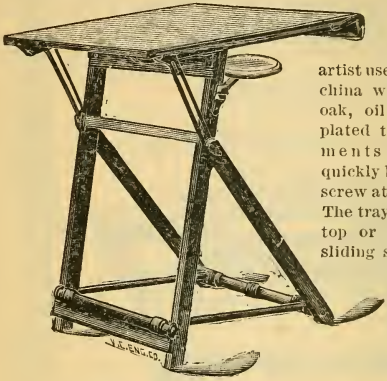
The drawing-board can be detached and the trestle folded up, occupying little more space than an ordinary drawing-board, a great advantage if the table is not used constantly, as it can be put out of the way or set up in a few minutes. Trestles are made of ash wood, fine shellac finish; drawing-boards are made of clear, well seasoned pine.

Size of Board.

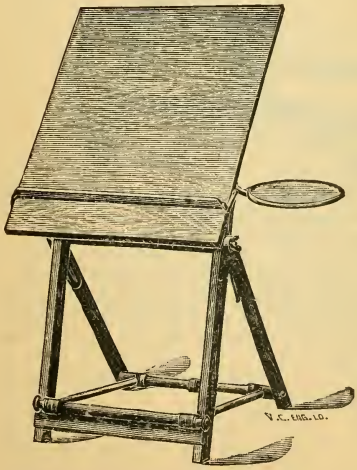
23 × 31	⅞ inch pine wood,	. . . . .	each,	$8.75
27 × 34	⅞ " "	. . . . .	"	10.00
31 × 42	⅞ " "	. . . . .	"	11.25
33 × 55	⅞ " "	. . . . .	"	15.00
36 × 48	⅞ " "	. . . . .	"	17.50
42 × 60	1⅛ " "	. . . . .	"	20.00

Patented Adjustable Folding Tables,

For the use of Architects and Artists. Also Drawing, Sewing and Card Tables.



They are firm in any position and are specially designed for artist use, for oil, water color and china work. Finely finished in oak, oil rubbed, with nickel plated trimmings. The adjustments are made easily and quickly by means of the thumb screw at the side of the frame. The tray can be swung under the top or detached at will; the sliding shelf may be placed at any height or out of the way at the top of the table. These tables are carefully constructed and finished and make a fine piece of furniture for studio or home. Size of top, 22×36 inches. Price, $4.00.



The above cuts represent our Easel Tables, folded, and adjusted for use.

Morse Drawing Tables.

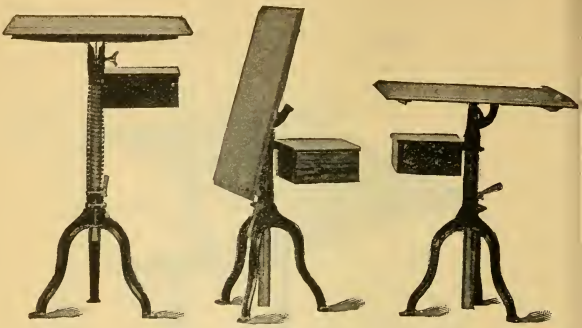
Style D, with Attachment No. 1.

This table is the smallest universal table of our make and combining, as it does, the raising and lowering, tilting and revolving movements, we believe it is the cheapest universal adjustment table manufactured. It is especially adapted for school and home use, is very rigid and is finished as well as any table we make. These tables are made with either iron or wooden legs, are finished in black enamel, having oil tempered steel springs, steel upright, and all iron parts carefully and solidly designed. Quantity price furnished on application.

Size of Top, hard wood, 18×24 in.; pine, 18×20 in.
Vertical Adjustment from 32 to 42 inches.

Without Attachments,	$5.00	With Attachment No. 5,	$6.00
With Drawer,	6.00	With Attachment No. 6,	6.00
With Attachment No. 1,	6.00		

For Description of Attachments see page 87⅞ *e*.



Style A.—Showing Different Positions.

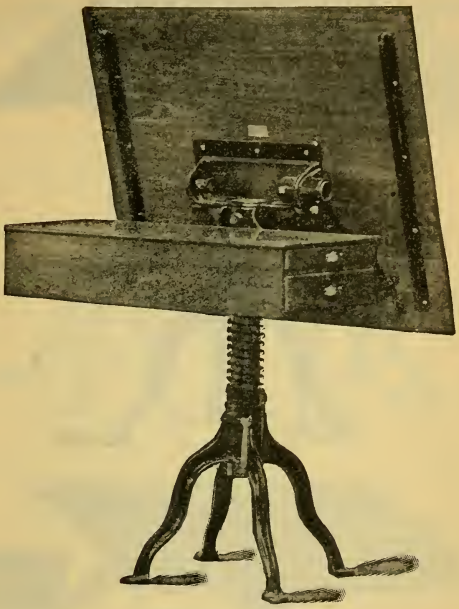
Style A.

Size of Top, hardwood, 24×26 in.
" " pine, 24×32 in.
Drawer, 7½×10 in.; 3 in. deep.
Vertical adjustment from 32 to 42 inches.
Weight, boxed, 65 pounds.
Compensating spring,
Polished brass upright,
Enameled iron work,
Nickel-plated trimmings.

Regular, ...	$10.00
With Attachment No. 1,*	10.00
" " No. 2,	11.50
" " No. 5,	10.00
" " No. 6,	10.00

For Description of Attachments see page 87⅞ *e*.

*Same with Drawer $1.00 extra.



Style B, Attitude 3.

Size of Top, hardwood, 30×36 in.; pine, 30×42 in.

" Drawer, 7½×10 in., 3½ in. deep.

Vertical Adjustment from 32 to 42 in. Weight, boxed, 100 pounds.

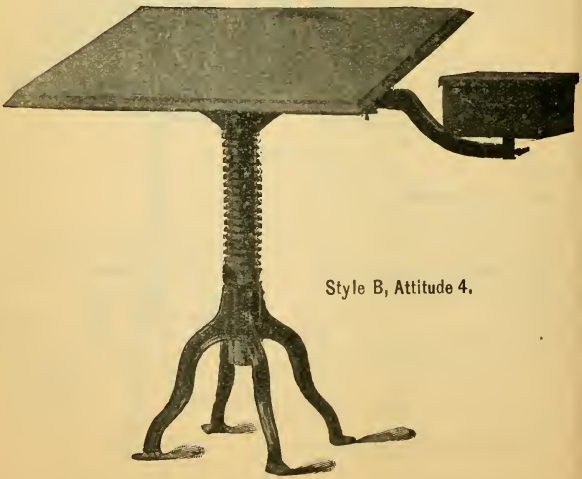
Compensating spring, polished brass upright, enameled iron work, nickel-plated trimmings.

Regular, ...	$15.00	With Attachment No. 4,	. $16.50
With Attachment No. 1,*	. 15.00	" " No. 5,	. 16.00
" " No. 2,	. 16.50	" " No. 6,*	. 15.00
" " No. 3,	. 18.50		

For Description of Attachments see page 87⅞ *e*.

*Same with Drawer, $1.00 extra.

Style B, Attitude 1.



Style B, Attitude 4.

Style A–C.

Pine Top,	36×48 inches,	and	2-drawer	Cabinet,	. . . . .	$30.00
"	36×54 "		"	"	. . . . .	31.00
"	36×60 "		3-drawer	"	. . . . .	33.00
"	36×72 "		"	"	. . . . .	34.00
"	42×72 "		"	"	. . . . .	35.00
Attachment No. 4, Drawer and Shelf on swinging arm, extra,						1.50
Style A–C without top,					. . . . .	25.00

DESCRIPTION OF SPECIAL ATTACHMENTS.

No. 1 is a Tray, as used on Style A, 6×26 in.; as used on Style B, 8×36 in. Price, $1.00.

No. 2 is a Tray, 12×14 in., which swings from top of drawer, with flexible band for glass of water; will swing out in front of board when top is inclined. Price, $1.50.

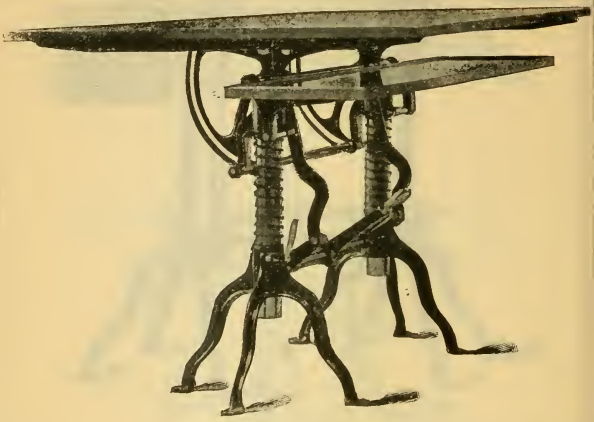
No. 3 is a Two-drawer Cabinet, with inside measurements of drawers as follows: top drawer, 13 in. wide, 26 in. long and 1¼ in. deep; bottom drawer, 13 in. wide, 26 in. long and 2½ in. deep. Price, $4.00.

No. 4 has Drawer 7½×10 in., 3½ in. deep, with tray top swinging on iron arm. Price, $1.50.

No. 5 is a Tray, swinging on an iron arm.

No. 6 is an Instrument Shelf at top of board, always remaining horizontal.

87⅞ *e*



Style C.

Pine Top,	48× 72	inches,	and 2-drawer Cabinet,	. . . .	$45.00
"	48× 84	"	" "		47.00
"	48× 96	"	" "		49.00
"	48×108	"	" "		51.00
"	48×120	"	" "		53.00
"	54×120	"	" "		55.00
Without top, ...					35.00

Styles A–C and C can be fitted with Attachment No 1, as follows:

Tray	15× 72	inches,	extra, ...	$3.00
"	15× 84	"	"	3.25
"	15× 96	"	"	3.50
"	15×108	"	"	3.75
"	15×120	"	"	4.00

Attachment No. 4, Drawer and Shelf on swinging arm, extra,	$1.50
Attachment No. 3, extra, ...	3.00

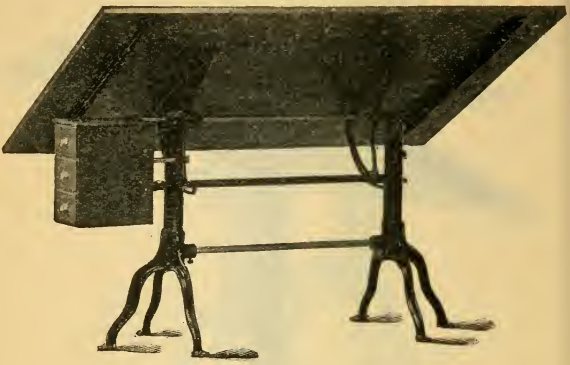
Prices furnished on application for special attachments not noted above.

Style F.

The tables shown on this and the following page differ from the universal tables, in that they have fewer adjustments. They are just as well finished as the universal tables shown on the preceding pages, but on account of having fewer parts, can be sold at a less price.

Style F, is similar to our Style B, having tilting and revolving movements only. Height from floor, 38 inches. Can be fitted with attachments as shown on page 87⅞ *e*.

Pine Top, .	30×42 inches, ...	$10.00
Hardwood Top,	30×36 "	10.00



Style G, with Tilting Movement.

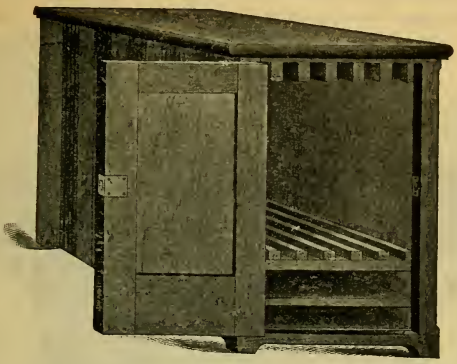
Style G, is similar to Style C in form, having a tilting movement only and carries any size board. Height from floor, 38 inches.

Style H, is a very convenient trestle, without adjustments, handsome and solid. Designed to carry all sizes of boards.

	G	H
Size of Top, 36× 48 inches,	$26.00	$18.00
" 36× 54 "	27.00	19.00
" 36× 60 "	28.00	20.00
" 36× 72 "	29.00	21.00
" 42× 72 "	29.50	21.50
" 48× 72 "	30.00	22.00
" 48× 84 "	32.00	24.00
" 48× 96 "	34.00	26.00
" 48×108 "	36.00	28.00
" 48×120 "	38.00	30.00
" 54×120 "	40.00	32.00
Without top,	20.00	12.00

On all tables, either single or double column, having an adjustment for raising and lowering, we use oil tempered steel springs which encircle tubes of polished brass tubing. The adjustment varies in height from 32 to 42 inches, This spring assists the draughtsman in raising and lowering the top, which it counter-balances. The spring is a distinguishing feature of our tables, and has been well called unique.

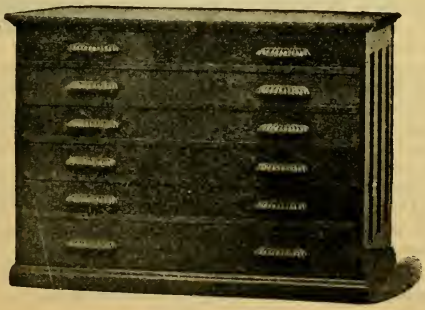
The Morse Drawing Board Cabinet.



This cabinet is made of oak, highly finished with brass trimmings, lock and key. It is made in several sizes, and will be found very convenient for architects, designers, patent office draughtsmen, and also for school use. Price of cabinet and 6 boards, 12×18, ... $15.00

Prices for other sizes furnished on application.

Drawer Cabinet for Filing Drawings.

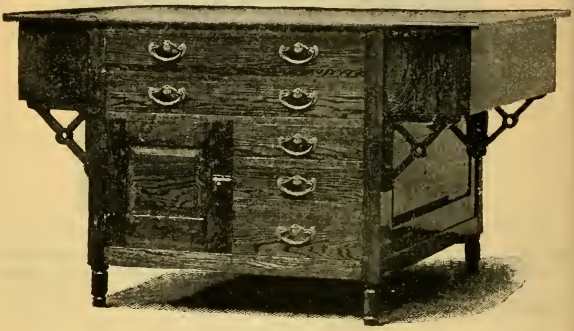


The above cabinet is one that we keep in stock and we generally have them on hand, in plain and quartered oak. This cabinet has six drawers;

inside measurement, 28x43 inches; five are 3½ inches deep and the bottom drawer is 5½ inches deep.

Drawer Cabinets,	Quartered Oak, polished finish,	$27.50
" "	Plain Oak, polished finish,	25.00
" "	Ash, plain finish,	20.00

Paper Cabinet and Cutter.



The boxes at each end are arranged to facilitate the work of cutting, and to provide a convenient place for a large roll of paper. They are made with lids which lift up out of the way when putting the roll in place. The one at the left contains a series of compensating rollers, on which the roll of paper rests, making it very easy to draw the roll of paper out to any desired length.

There is a brass slot to guide the knife in cutting the paper, which is held firmly in position by a steel bar fastened to the lid at the left. The receptacle at the right is very convenient when cutting up quantities of blue process paper, as the paper can be placed in it and the lid closed, excluding all light, thus keeping the paper in perfect condition and facilitating the work of printing.

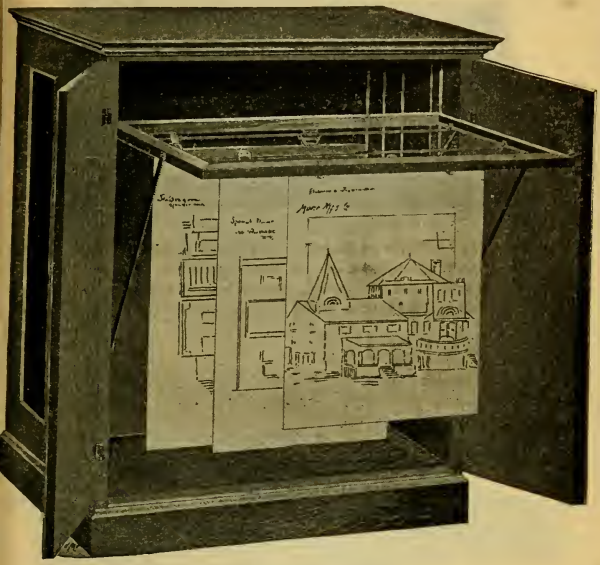
This cabinet has five drawers and four large pigeon holes, one of which is intended for blue process paper and has an extra door. This cabinet is made of oak, highly finished, and well accommodates paper from 30 to 42 inches in width.

Dimensions and Prices.

No. 1, length over all, 62 inches; height 36 inches; depth, inside measurement, 37 inches; price,	$35.00
No. 2, length over all, 62 inches; height 36 inches; depth, inside measurement, 43 inches; price,	40.00

Barnes' Cabinet for Filing Drawings.

(PATENTED.)



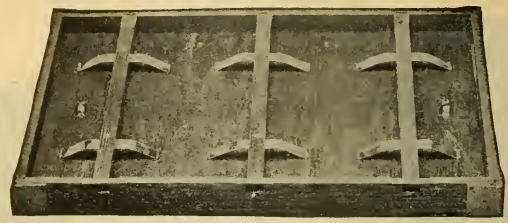
This unique cabinet, the invention of a prominent architect, is the most practicable file for drawings yet produced. As may be seen by the cut, the drawings can be filed perfectly flat, yet so convenient that any one can be referred to almost immediately.

The rack which carries the drawings is easily moved, and may be pushed back into the case and the door closed, making a dust-proof cabinet. A large quantity of drawings may thus constantly be kept at hand for reference.

These cabinets are of highly finished oak and fitted with brass trimmings, and are 39 inches high, 30 inches wide, and 24 inches deep, inside measurement. Price, ... $20.00

We make many cabinets from our own designs and from designs furnished us, and are prepared to submit prices on any special cabinet.

Blue Print Frames.



We make two qualities of blue print frames, which are styled quality A and B. Quality A is built of oak, highly finished, having heavy cast brass corners and brass trimmings. These frames are as good as can be produced, and combine all the latest improvements in blue print frames.

Quality A.		Without Glass.
No. 1, 20x26 inches,		$ 6.50
No. 2, 24x32 "		7.50
No. 3, 25x37 "		9.00
No. 4, 30x42 "		12.00
No. 5, 42x60 "		22.00

All other sizes made to order.

Blue Print Cars.

Every office building should include a blue print room. If there is no blue print room in your building you should have a convenient apparatus of your own for running your blue print frame out of some sunny window.

Blue print frames are often heavy and it is very necessary to have a car or apparatus of some kind to handle them. We show five sizes and styles of blue print cars or standards. In addition we have many plans which we can submit, to suit any particular window.

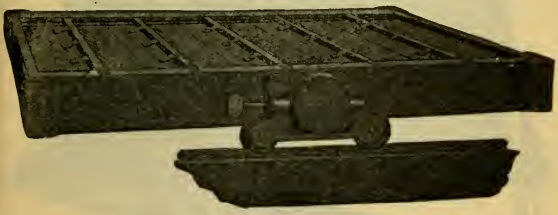
Style A is a wooden frame, especially adapted for small, light frames and can be placed on a ledge prepared for it outside the window. The blue print frame can be tilted to any angle to meet the sun's rays, and can also be turned completely over to insert paper and tracings. Strongly made and adapted to the following sized blue print frames:

12x16, 16x21, 20x26, 24x32.

Price, without frame, ... $5.00

Style B.

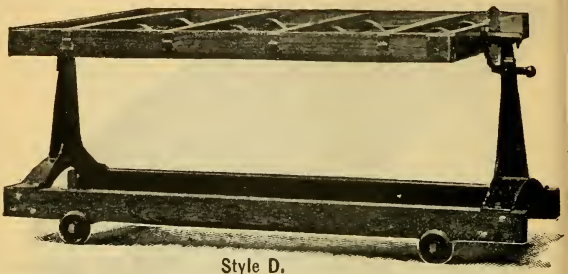
Style B is a car running on iron tracks out of the window, where it can be turned in any direction and to any angle, as the rack for holding the blue print frame can be both revolved and tilted. This car is convenient when a number of different size blue print frames are in use. It is one of our popular styles and is made of oak, highly finished; all metal portions are either enameled or nickel plated. We advise its use on frames Nos. 1, 2, 3 and 4. Price, with suitable track, . . $15.00



Style C.

Style C is a very convenient apparatus or car running on a track out of the window. It is all iron, handsomely enameled, and is fastened to a permanent blue print frame, allowing the frame to tilt to any angle for proper exposure, and can be turned completely over to allow for the insertion of tracings and blue print paper. A very fine frame, many of which are in use, ... $15.00

Style D is a most convenient car for handling very large frames. It is so well balanced that the largest frame can be very easily manipulated. The blue print frame is swung between two upright iron standards provided with wheels which are arranged to run on a track out of the window.

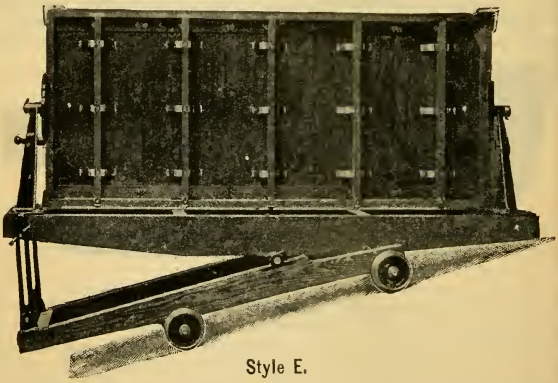


Style D.

The tilting of the frame is controlled by a notched wheel which permits the frame to be fixed at any angle. A frame which is much wider than the window can be swung through and afterwards adjusted to the desired angle. The frame can be turned over for the insertion of blue print paper, etc. The iron work is handsomely enameled, the woodwork is of oak, highly finished, and can be used for the following size frames:

Nos. 1, 2, 3 and 4, with suitable track, . . .	$15.00
No. 5, " " " . . .	20.00

These prices do not include the blne print frame.



Style E.

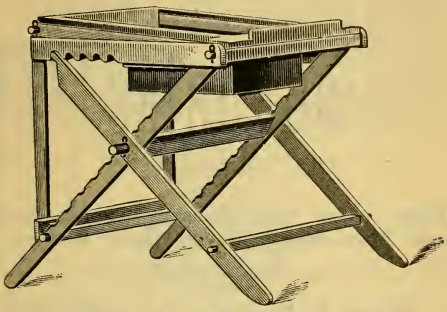
Style E is larger and heavier than Style D, and has in addition the forward tilt. We have made this car for the very largest size frames. In all other particulars it is the same as Style D and has the same high finish that we give to all our goods.

Nos. 1, 2, 3 and 4, wlth suitable track, . . .	$25.00
No. 5, " " " . . .	30.00

These prices do not include blue print frames.

The "Seldis" Drawing Table

For Mechanical Draughtsmen, Architects and Artists.



ADVANTAGES.

1. The draughtsman can work in a NATURAL POSITION at all times, no matter the size of the drawings or the part of the Board he may desire to work.
2. Table and board being separate, any number of Boards can be used.
3. No matter the position of the draughtsman, the Swing Frame always holds the centre of gravity within the base, therefore, no tipping of the table could occur.
4. The harder the strain the more securely locked and, therefore, the more stable.
5. Every motion self-locking.
6. If not in use, can be folded into very small compass.
7. By drawing out the eight wooden wedges it can be packed directly on the drawing board, as no part exceeds the length of the board.
8. Each Table has a Drawer.
9. Being adjustable to any angle adapts it for either technical or free-hand drawing.
10. Being adjustable in height, it is adapted for any size of men or women, and in the lowest position makes, with the board, an excellent writing desk.

Price of Table, $15.00.

Drawing Board separate price, according to size.

FROM THOMPSON-HOUSTON ELECTRIC CO.

MR. OSCAR SELDIS:

DEAR SIR,—I have been using a number of your Drawing Tables in my department now for more than a year, and they give satisfaction; in fact, I have at present more than ninety of them in use, and I do not remember a single complaint concerning them.

I have no hesitation in saying I think them the best drawing tables I ever saw.

Yours respectfully,

M. O. WAKEFIELD,
Chief Draughtsman, T.-H. Electric Co.

Since the above was written, the number in use by the T.-H. Electric Co. has been increased to the vicinity of 150 Tables.

SECTION VIII.

SUNDRIES,

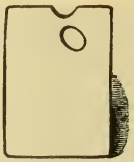
COMPRISING

CHINAWARE, GLASS, IVORY PALETTE KNIVES, BURNISHERS, STEEL PENS, SPONGE, GLUE, FIXATIF ROUGET, &c.

Winsor & Newton's Chinaware, &c.

Palettes.

OVAL.

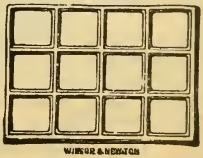


OBLONG.

No. 245.

3 in. Oval or Oblong,	.15	7 in. Oval or Oblong,	.40
4 in. " "	.25	8 in. " "	.45
5 in. " "	.30	9 in. " "	.55
6 in. " "	.35		
10 in. Oval or Oblong,	.65		
11 in. " "	.80		
12 in. " "	.95		

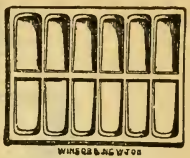
Square Divided Flat Tiles.



No. 246.

3 Square,	.30	9 Square,	.65
6 "	.45	12 "	.75

Divided Slants and Centre Slants.



No. 247.

3 Divisions,	.20	6 Divisions,	.50
4 "	.35	8 "	.65
5 "	.45	12 "	.85

No. 248. Centre Slant, ...35

Slant Well Slabs.

No. 249. Box or 3 Well Slabs, ...30
5 Well Slabs, ...65

Round Slant and Basin.

No. 250. Basin for Architects' Offices, etc., ... $1.25

India Ink and Color Slabs.

No. 251.

No. 1 Ink Slab,	.15	No. 11 Ink Slab,	.35
4 "	.25	11½ "	45

Nests of Cabinet Saucers.

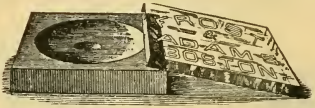
No. 252.	No. 1,	per set,	.60
	2,	"	.70
	3,	"	.80
	Extra Large Size,	"	1.00

Round Tinting Saucers.

No. 253.

1 inch,	.03	2½ inch,	.06
1½ "	.04	3 "	.07
2 "	.05	4 "	.08

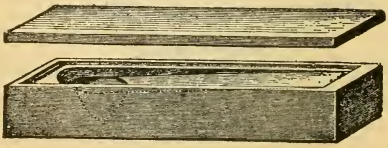
Ink Saucer.



No. 254. Frost & Adams' Ink Saucer. Square, with Glass Cover, .50

NOTE.—These Ink Saucers are made of Slate, the surface of which presents just the right grain for grinding the ink smoothly. The cover is of plate glass, ground to a joint.

Patent Ink Slab.



No. 255.

Keuffel & Esser's Patent Ink Slab, with Cover, $1\frac{3}{4}\times4\frac{1}{2}$ inches,	.50
" " " " " $2\frac{1}{8}\times5\frac{1}{4}$ "	.60

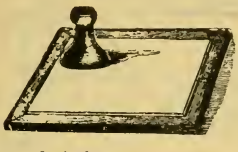
Winsor & Newton's Plain Flat Tiles.

No. 256.	6 inch Square,	.30
	8 "	.40
	10 "	.65
No. 257.	$3\frac{1}{2}\times2\frac{1}{4}$ inches, Rough or Unglazed (Bartholomew's),	.20
	$2\frac{1}{2}$ inch Saucers (Woolwich).	.06

Various patterns of Tiles in stock, not enumerated in Catalogue.

Glass.

Ground Glass Slabs.



No. 258.	Glass Slab, 6 × 6 inches,	.70
	" 8¼ × 8¼ "	1.00
	" 11 × 17 "	1.75

Glass Mullers.

No. 259.

1	inch diameter,	.15	2	inches diameter,	.35
1¼	"	.25	2¾	" per lb.	.70

Reading Glasses.

No. 259½. German Silver Rim, Ebonized Handle,

1½	inches diameter,	.75	2¼	inches diameter,	$1.50
1¾	"	1.00	2¾	"	1.75
2	"	1.25	3	"	2.25

Diminishing Glasses.

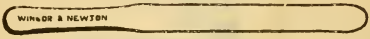
No. 259½.

Round, Unfinished Edges,	.25
" Ground "	50
Oval, Unfinished "	.25
Round, 1¼ inch, German Silver Rims,	1.25
" 1½ " " "	1.50
" 2 " " "	1.75
" 3 " " "	2.00

Water Glasses.

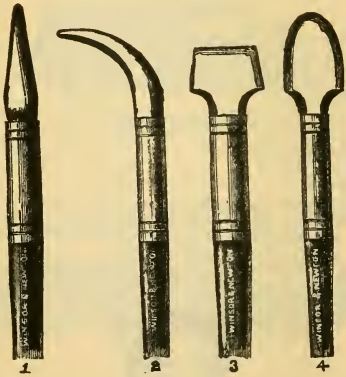
No. 260.	Artists' Water Glass, 2⅜ inch diameter,	.15
	" " 3¼ "	.25
	" " 3¾ "	.35
	" " 4¼ "	.45
No. 261.	Tumblers with Heavy Bottoms, for Architects' use, per dozen,	$1.50
	" " " " " each,	.15

Ivory Palette Knives.



No. 262.	No. 1.	Small Size,	.22
	2.	Middle Size,	.45
	3.	Large Size,	.60
	4.	Extra Large Size,	.90

Illuminating Agate Burnishers.



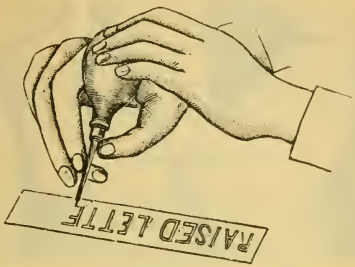
No. 263.	No. 1.	Extra Small Size, Pencil Pointed,	.50
	2.	Round and Curved,	.55
	3.	Flat or Wedged Shape,	.65
	4.	Flat and Round Pointed or Oval,	.65

16 kinds, Assorted.

14 " " of Blood Stone Burnishers for Gold or China, ... each, 60 to $150

The Air Pencil.

For Making Raised Letters and Relief Work.



To be applied to Plaques, Vases, Fancy Boxes, Dance Cards, Menus, and Ornaments of all kinds. By the use of the Air Pencil the most beautiful effects in Raised Lettering can by produced.

Outfit complete, in neat box, comprising Air Pencil, Dry Medium and Liquid, ...	per dozen,	$9.00
Medium No. 1 (Liquid), bottles, ...	"	2.40
Medium No. 2 (Dry Powder), boxes, ...	"	2.40

Steel Pens.

No. 264.	Crow Quill Pen,	Joseph Gillott's, .	per dozen,	.60
	Lithographic Pen,	" . .	"	.60
	Mapping "	" . .	"	.60
	Lettering "	No. 303, " . .	"	.10
	French Crow Quill Pen, ...		"	.50
	Kensington Pens, various sizes, ...		"	.20
	Cork Pen Holders, ...		each,	.10

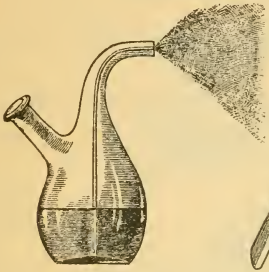
Sponge.

No. 265.	Sponges for Artists' use, ...	each,	.10 to .25

Mouth Glue.

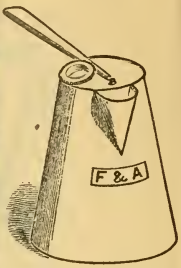
No. 266.	Mouth Glue, piece, ...	.05

Fixatif Rouget.



Blowing Apparatus, No. 267.

Folding Tubular, No. 269 (A.)



Large Tin, No. 269 (B.)

No. 267.	Box containing Apparatus, Liquids, etc.,	$2.20
	Small Bottle Fixatif,	.38
	Large " "	.60
	Bottle Liquid Special,	.20
	Blowing Apparatus, separate,	1.45

American Fixatif.

No. 268.	Frost & Adams' Fixatif, Half Pint Bottle	.35
	" " Pint "	.65
	" " Quart "	1.15
	" " 2 ounce "	.20
	" " 1 " "	.10

Atomizers,

For Applying Fixatif.

No. 269.	A. Folding Tubular,	.25
	B. Large Tin,	.50
	Favorite,	.50
	A, No. 2. Folding Nickel Plated Tubular,	1.25

Empty Mahogany Slide Cover Boxes.

For Whole and Half Cakes of Water Colors.

No. 270.

12 Whole Cake Box,	.38	12 Half Cake Box,	.25
18 " "	.50	18 " "	.35
24 " "	.60	24 " "	45

SECTION IX.

WAX FLOWER MATERIALS,

COMPRISING

SHEET WAX, GILT LEAF MOULDS, TIN FLOWER CUTTERS, EXTRA FINE COLORS, WIRE, GLASS SHADES, POND LILY SHADES. WOODEN MOULDING TOOLS, &c.

Sheet Wax.

No. 271.

	Per pkg.		Per pkg.
White,	.10	Tea Rose,	.10
Green,	.10	Purple,	.10
Pink,	.10	Variegated,	.10
Yellow,	.10	Red, Plain or Variegated,	.20
Blue,	.10	Scarlet, Plain or Variegated,	.20

No. 272. Double Thick White, ... per package, .20
" Pond Lily, White and Green, ... " .20

NOTE.—Our Wax is warranted the best in the market. Each package contains 12 sheets, excepting the Pond Lily.

The Pond Lily is double in size and thickness of the Single Wax, No. 271, and is suitable for making Wax Crosses, Pond Lilies, &c. Each package contains 6 sheets.

Gilt Leaf Moulds.

Finely Veined and Moulded from Nature.

No. 273.

Azalea,	3 sizes,	.08, .10 and .12	Fuchsia,	3 sizes,	.08, .10 and .12
Abutilon,	2 "	.10 and .12	Fish Geranium,	3 "	.08, .10 and .12
Blackberry,	3 "	.08, .10 and .12	Grape,	2 "	.20 and .25
Butterflies,	3 "	.08, .10 and .12	Heliotrope,	3 "	.08, .10 and .12
Chestnut,	3 "	.12, .16 and .20	Honey Suckle,	3 "	.10, .12 and .16
Camelia,	2 "	.12 and .16	Ivy,	3 "	.08, .10 and .12
Currant,	2 "	.08 and .10	Jessamine,	2 "	.08
Clemestine,	3 "	.12, .12 and .16	Lily of Valley,	2 "	.12 and .16
Dogwood,	2 "	.12 and .20	Laurestina,	3 "	.08, .10 and .12
Elm,	2 "	.12 and .16	Maple,	3 "	15, .20 and .25

No. 273.

Myrtle,	3 sizes,	.08 and .10
Orange,	2 "	.08 and .10
Oak,	3 "	.15, .20 and .25
Pond Lily,	2 "	.12 and .16
Passion Leaf.	1 "	.12
Pansy,	2 "	.08 and .10
Rose Geranium,	2 "	.08 and .10
Rose,	5 "	.08, .10 and .12
Sumac.	2 "	.08 and .10
Salvia,	3 sizes,	.08, .10 and .12
Strawberry,	3 "	.08, .10 and .12
Sassafras,	3 "	.16, .20 and .25
Verbena,	3 "	.08, .10 and .12
Violet,	3 "	.08, .10 and .12
Willow,	2 "	.12 and .16
Wild Cherry	3 "	.12, .16 and .25
Woodbine.	4 "	.12, .16 and .20

Tin Flower Cutters.

No. 274.

Azalea,	.12
Camelia,	.20
Clemestine,	12
Dahlia,	.25
Easter Lily,	.10
Fuchsia,	.12
Forget-me-not,	10
Geranium,	.10
Honey Suckle,	10
Heliotrope,	10
Jessamine,	10
Lily of Valley,	10
Moss Rose Calix,	12
Narcissus,	10
Orange,	10
Pink,	.15
Pyrus Japonica,	.12
Pansy,	.15
Pond Lily,	.30
Quaker Lady,	.15
Rose,	30
Star Flower,	12
Sweet Pea,	15
Sweet Alysium,	12
Tube Rose,	.20
Verbena,	.10
Violet,	.12
Wisteria,	.15
Wild Rose,	.10

Extra Fine Colors,

Prepared for Coloring Wax.

No. 275.

	Per bottle.
Analine Pink,	.15
Bt. Sienna,	.10
Bt. Carmine,	.50
Bt. Umber,	.10
Brown Madder,	.50
Bloom,	.10
Carmine,	.15
Carmine, No. 40,	.25
Crimson Lake,	.15
Cobalt,	.10
Chrome Yellow,	.10
Chrome Deep,	.10
Chrome Orange,	.10
Chrome Green,	.10
Em. Green,	.10
Frosting,	.10
Ivory Black,	.10
Light Red,	.10
Lemon Yellow,	.10
Madder Lake,	.50
Megilp,	.10
Naples Yellow,	.10
Orient Carmine,	.50
Prussian Blue,	.10
Pure Scarlet,	.75
Purple (Analine),	.15
Royal Purple,	.15
Raw Sienna,	.10
Rose Madder,	.50
Raw Umber,	.10
Scarlet Lake,	.15
Scarlet,	.10
Tea Rose,	.10
Terre Verte,	.10
Ultramarine,	.10
Van. Brown,	.10
Violet Carmine,	.50
Vermilion,	.10
White,	.10

Wire.

No. 276.	Spool Cotton, Green and White,	per spool,	.10 to .13
	Coil Silk or Cotton, Green and White,	per coil,	.10
	Coil, Cotton Covered, Large Wire,	"	.10
	Uncovered Wire,	"	.05

Glass Shades.

Without Stands.

No. 277.

Inches.	Round.	Oval.	Inches.	Round.	Oval.	Inches.	Round.	Oval.	Inches.	Round.	Oval.
7	.24	.27	28	.84	.94	41½	$1.67	$1.94	55	$3.27	$3.74
9	.24	.27	28½	.87	.97	42	1.74	2.00	55½	3.34	3.80
10	.24	.27	29	.90	1.00	42½	1.80	2.07	56	3.44	3.87
12	.24	.27	29½	.94	1.07	43	1.87	2.14	56½	3.54	4.00
14	.24	.27	30	.97	1.14	43½	1.94	2.20	57	3.67	4.14
15	.24	.27	30½	1.00	1.17	44	2.00	2.27	57½	3.84	4.27
16	.27	.30	31	1.07	1.20	44½	2.04	2.34	58	4.00	4.40
17	.27	.30	31½	1.10	1.24	45	2.07	2.40	58½	4.17	4.60
18	.27	.30	32	1.14	1.30	45½	2.14	2.44	59	4.34	4.80
19	.30	.34	32½	1.14	1.30	46	2.14	2.47	59½	4.50	5.00
19½	.34	.37	33	1.17	1.34	46½	2.20	2.54	60	4.67	5.20
20	.37	.40	33½	1.20	1.37	47	2.27	2.60	60½	4.84	5.40
20½	.40	.44	34	1.24	1.40	47½	2.30	2.67	61	5.00	5.60
21	.40	.47	34½	1.27	1.44	48	2.34	2.74	61½	5.20	5.84
21½	.40	.50	35	1.27	1.44	48½	2.40	2.80	62	5.40	6.00
22	.44	.54	35½	1.30	1.47	49	2.47	2.87	62½	5.67	6.20
22½	.44	.54	36	1.34	1.50	49½	2.54	2.94	63	5.87	6.47
23	.47	.57	36½	1.37	1.54	50	2.60	3.00	63½	6.07	6.74
23½	.50	.60	37	1.37	1.57	50½	2.67	3.07	64	6.27	7.00
24	.54	.60	37½	1.40	1.60	51	2.74	3.14	64½	6.47	7.34
24½	.54	.64	38	1.44	1.64	51½	2.80	3.20	65	6.67	7.67
25	.57	.67	38½	1.44	1.67	52	2.87	3.27	65½	6.87	8.00
25½	.60	.70	39	1.47	1.70	52½	2.94	3.34	66	7.07	8.34
26	.67	.74	39½	1.50	1.74	53	3.00	3.40	66½	7.34	8.67
26½	.70	.77	40	1.54	1.77	53½	3.07	3.47	67	7.67	9.00
27	.74	.80	40½	1.57	1.84	54	3.14	3.54	67½	8.00	9.34
27½	.77	.87	41	1.60	1.87	54½	3.20	3.64	68	8.34	9.67

Pond Lily Shades.

With Looking Glass Stands.

No. 278.

No. 22,	5½ inch,	$1.30	No. 36,	9 inch,	$3.00
24,	6 "	1.40	40,	10 "	3.65
28,	7 "	1.80	44,	11 "	4.50
32,	8 "	2.35	48,	12 "	5.50

No. 279. Round Walnut and Black Stands, ... per inch, .08
Oval " " . . . . . " .12

To find the inches in a shade or number, calculate as follows:
ROUND SHADES,—Add the height to three times the diameter.
OVAL SHADES,—Add three inches to once the height and once the breadth and twice the length.

Wooden Moulding Tools.

No. 280. Rose, Rosewood, ...10
Lily of Valley, Rosewood, ...10
With two Knobs, " 15
" " Whitewood, ...10
Extra of different patterns, Rosewood, ...20 to .50

Miscellaneous.

No. 281. Curling Pins, each, ...05
No. 282. Moss, per bunch, ...25
No. 283. Sprig Moss, per package, ...05
No. 284. Arrow Root, ¼ lb. package, ...17
No. 285. Stamens, per bunch, ...05
No. 286. Rose Cups, per doz., ...06
No. 287. Brushes (for Veining), each, ...05 to .20
No. 288. Brushes (for Coloring), each, ...08
No. 289. Palettes, each, ...20 to .50
No. 290. Palette Knives, Small, each, ...25
No. 291. Lessons in Modelling Wax, by J. H. Mintorn, ... $1.50
No. 292. The Art of Modelling Flowers in Wax, by George Worgan, . . $1.00
No. 293. The Art of Modelling and Making Flowers and Fruit, by Charles Pepper and Madam Elise, ...75
No. 294. Wooden Crosses, Harps, Lyres, etc., each, ...25 to $1.00
No. 295. Chenille, for Glass Shades, in suitable Colors, per yard, .20 and .30
No. 296. Fayal Baskets, for Moss and Wax Flowers, White and Colored, the best in the market, each, ...06 to $2.00

SECTION X.

TEXT BOOKS ON ART,

MECHANICAL DRAWING, ALPHABETS, &c.

Winsor & Newton's
Handbooks on the Fine Arts.

No. 297. Artistic Anatomy of Cattle and Sheep. By B. Waterhouse Hawkins, F.L.S., F.G.S., ...40
Artistic Anatomy of the Dog and Deer. By B. Waterhouse Hawkins, F.L.S., F.G.S., ...40
Artistic Anatomy of the Horse. By B. Waterhouse Hawkins, F.L.S., F.G.S., ...40
Artistic Anatomy of the Human Figure. By Henry Warren, K.L., .40
Artistic Treatise on the Human Figure. By Henry Warren, K.L., ...40
Art of Botanical Drawing. By F. W. Burbidge, ...40
Art of Figure Drawing. By C. H. Weigall, ...40
Art of Flower Painting. By M. Duffield, ...40
Art of Landscape Painting in Oil Colors. By W. Williams, . . .40
Art of Landscape Painting in Water Colors. By Thomas Rowbotham and Thomas L. Rowbotham, ...40
Art of Marine Painting in Oil Colors. By J. W. Carmichael, . .40
Art of Marine Painting in Water Colors. By J. W. Carmichael, .40
Art of Miniature Painting. By Charles W. Day, ...40
Art of Mural Decoration. By T. G. Goodwin, B.A., ...40
Art of Painting and Drawing in Colored Crayons. By Henry Murray, F.S.A., ...40
Art of Portrait Painting in Oil Colors. By Henry Murray, F.S.A. .40
Art of Portrait Painting in Water Colors. By M. Merrifield, . .40
Art of Sketching from Nature. By Thomas Rowbotham and Thomas L. Rowbotham, ...40
Art of Transparent Painting on Glass. By Edward Groom, . .40
Art of Wood Engraving. By Thomas Gilks, ...40
Drawing Models and their Uses. By J. D. Harding, ...40
Elements of Perspective. By A. Penley, ...40
Guide to Painting Photographic Portraits. By A. N. Rintoul, . .80
Half-Hour Lectures on Drawing and Painting. By Henry Warren, K.L., ...40
Hints for Sketching in Water Colors from Nature. By Thomas Hatton, ...40
Instructions for Cleaning, Repairing, Lining and Restoring Oil Paintings. By Henry Mogford, F.S.A., ...40
Manual of Illumination. By J. J. Laing, ...40
Companion to the above. By J. J. Laing, ...40
Principles of Coloring in Painting. By Charles Martel, . . .40
Dictionary of Water Color Technique. By Charles Wallis, .40
The Art of Flower Painting in Oil, with colored illustrations. By W. J. Muckley, ...40
A Short Study in Gothic Architecture, with illustrations. By S. T. H. Parks, ...40

No. 297. Principles of Form in Ornamental Art. By Charles Martel, .40
System of Water Color Painting. By A. Penley, ...40
Transparency Painting on Linen. By W. Williams, . . .40
Art of Etching Explained and Illustrated, ...40
The Art of Painting on China, with a chapter on Terra Cotta Painting in Oil, ... 40
Rules of Perspective, with letter of approval from Prof. John Ruskin, ...40
Trees, and how draw them, with illustrations. By Phillip H. Delamotte, ...40
The Rudiments of Decorative Painting (as applied to the Rooms of a Dwelling House,) in Oil or Distemper Colors. By Owen W. Davis, ...40
Fruit and Still Life Painting in Oil Colors, with colored illustrations. By W. J. Muckley, ...40
The Art of Pen and Ink Drawing, with illustrations. By H. R. Robertson, ...40
Modern Water Colors Illustrated, with actual washes of the pigments on Whatman's Drawing Paper, with an interesting essay on the recent water color controversy. By J. Scott Taylor, B.A., Camb., ...40

Handbooks on the Fine Arts, &c.

No. 298. Art of Wood Engraving. By Wm. A. Emerson, ...50
China Painting. By John C. L. Sparks, ...45
Designs and Instructions for Decorating Pottery, ...50
Flaxman's Outline Designs for Decorating Pottery, . . . 1.00
Guide to Animal Drawing. By C. H. Weigall, ...40
Guide to Figure Drawing. By G. E. Hicks, ...40
Guide to Figure Painting in Water Colors. By Sidney T. Whiteford, ...40
Guide to Flower Painting in Water Colors. By G. Rosenberg, . .40
Guide to Levelling and Surveying. By W. Pease, ... 40
Guide to Light and Shade Drawing. By Mrs. M. Merrifield, 40
Guide to Miniature Painting and Coloring Photographs. By J. S. Templeton, ...40
Guide to Oil Painting. Part I. By J. S. Templeton, ...40
Guide to Oil Painting. Part II. (Landscape from Nature.) By A. Clint, ...40
Guide to Painting on Glass. By H. Bielfeld, ...40
Guide to Pencil and Chalk Drawing. By G. Harley, ...40
Guide to Pictorial Art. By H. O'Neil, ...40
Guide to Pictorial Perspective. By B. R. Green, ...40
Guide to Sketching from Nature in Water Colors. By L. C. Miles, .40
Guide to Water Color Painting. By R. P. Noble, ...40
Hints for Pupils in Drawing. By Helen M. Knowlton, . . . 1.00
Hints for Sketching Trees from Nature in Water Colors. By Thomas Hatton, ...40
Hints on Sketching from Nature. Part I. By N. E. Green, . . .40
" " " " II. " " . . .40
" " " " III. " " . . .40
Hunt's Talks on Art, ... 1.00
Manual of Color, with a Catechism. By R. Redgrave, R.A., .40
On the Materials Used in Painting, with Remarks on Varnishing and Cleansing Pictures. By Charles Martel, ...40
Principles of Perspective. By Henry Lewis, B.A., ...40
Guide to Crayon and Charcoal Drawing. By J. B. Crocker, . .35
Handbook on Lustra and Kensington Painting, ...25
How to Paint Tapestry. By M. T. Wynne, ...50

Text Books on Fine Arts.

No. 290.	Art Recreations. By Marion Kemble,	$2.00
	Bacon's Theory of Color,	1.25
	Barnard's Handbook of Foreground and Foliage,	2.50
	" Landscape Painting in Water Colors,	9.00
	" Sketching from Nature,	9.00
No. 299.	Cave on Color, } 2 in one	1.25
	" on Drawing, }	
	Cassell's Copy Books,	.25
	" Free-Hand Drawing Book,	1.50
	Chapman's American Drawing Book,	6.00
	Dolby's Architectural Drawing Book, 6 Nos., each,	.30
	" Marine and River Studies, 6 Nos., "	.30
	Field's Chromotography,	2.50
	Gauci's Studies of Trees, 12 Plates, each,	.35
	Goodall's Portfolio Studies, 7 Plates, "	.45
	Green's Advanced Lessons, 6 Plates, "	.45
	" Elementary Lessons, 24 Plates, "	.16
	" First Studies of Landscape, in 6 Nos., "	.16
	" Illustrations of the 5 Orders of Architecture, 6 Plates, "	.45
	" Leaves from Sketch Book, in 6 Nos., "	.30
	" Sepia Drawing Lessons, 6 Nos., "	.30
	Harding's Elementary Art,	10.50
	" Guide and Companion,	5.50
	" Lessons on Art,	6.50
	" Lessons on Trees,	6.50
	Harper's Advanced Studies of Landscape Scenery, 12 Plates, each,	.30
	Harper's Easy Course of Landscape Drawing Lessons, 6 Nos., each,	.16
	Herme's Copy Books each,	.20
	Hick's Human Figures, 1.20, 1.75,	2.40
	Hints to Young Painters in Portraiture. By Thos. Sully,	1.00
	Leitch's Studies in Sepia,	2.50
	" Studies in Sepia and Neutral Tint,	2.50
	" Studies in Water Color,	2.50
	Little Artists,	.15
	Little Painters,	.25
	Noble's Progressive Lessons in Water Color Painting, 12 Plates,	4.25
	Principles of Perspective. By Albert Thompson.	1.25
	Raze's Elementary Drawing Book, 12 Nos., each,	.16
	Ropes' Linear Perspective,	1.00
	Rowney's Various, in 20 Plates, for Crayon Studies, each,	.45
	Sketching from Nature in Water Colors. By Aaron Penley,	7.50
	Stark's Drawing Book of Animals, 6 Nos., each,	.30
	Students' Drawing Cards, per set,	.75
	Syer's Advanced Drawing Book, 6 Nos., each,	.30
	" Early Landscape Drawing Book, 6 Nos., "	.30
	" Portfolio Studies, 6 Plates, "	.45
	" Progressive Drawing Book, 6 Nos., "	.16
	" River Scenes and Shipping, 6 Nos., "	.60
	" Sketch Book, in 3 Parts, "	1.20
	Walker's Animals and Figures,	3.25
	Weigall's Drawing Book of Animals, 12 Nos., each,	.16
	Youths' Drawing Book,	.25

NOTE.—A large variety of Studies in separate copies of Heads, Figures, Groups, Animals, Landscapes, etc., both Plain and Colored, from 15 cents to $3.00 each. Also a long list of Copy Books not mentioned herein.

Text Books on Mechanical Drawing, &c.

No. 300.	Cassell's Building and Construction,	$1.00
	Color,	1.50
No. 300.	Cassell's Drawing for Cabinet Makers,	$1.50
	" Drawing for Carpenters and Joiners,	1.75
	" Drawing for Machinists,	2.00
	" Drawing for Mechanics,	1.00
	" Freehand Drawing,	3.00
	" Gothic Stone Work,	1.50
	" Linear Drawing,	1.00
	" Models,	1.50
	" Perspective,	1.50
	" Practical Drawing,	2.50
	" Projection,	1.00
	" Systematic Drawing and Shading,	1.00
	Decorative Design,	3.50
	Gillespie's Practical Treatise on Surveying,	3.00
	Haswell's Engineers' and Mechanics' Pocket-Book,	4.00
	Henck's Field Book,	3.00
	Mahan's Elementary Course of Civil Engineering,	4.00
	" Industrial Drawing, comprising the Description and Uses of Drawing Instruments, etc.,	3.00
	Minifie's Mechanical Drawing. A Text-Book of Geometrical Drawing, for the use of Mechanics and Schools,	4.00
	Nystrom's Pocket-Book of Mechanics and Engineering,	3.50
	Principles of Ornamental Art. By Edward Hulme, F.L.S., F.S.A.,	12.00
	Prof. Walter Smith's Freehand Outline Drawing,	.25
	" " Intermediate,	.15
	" " Mechanical Projection and Drawing,	.25
	" " Model and Object Drawing,	.25
	" " Perspective Drawing,	.25
	" " Plane Geometrical Drawing,	.25
	Prof. Warren's Drafting Instruments,	1.25
	" " Elements of Machine Construction and Drawing,	7.50
	" " Freehand Drawing,	.75
	" " Linear Perspective, Elementary,	1.00
	" " Plane Problems,	1.25
	" " Projection Drawing,	1.00
	Rankine's Civil Engineering,	8.00
	Trautwine's Pocket Edition of Engineers' Measurements,	5.00

Text Books of Alphabets, &c.

No 301	Ames' Book of Alphabets,	$1.50
	Art of Lettering. By A. P. Boyce,	$3.50
	Becker's Ornamental Text-Book,	4.50
	Boyce's Modern Ornamenter and Interior Decorator,	3.50
	Copley's Alphabets, Plain and Ornamental,	3.00
	Dearborn's Ornaments, Scroll, etc.,	2.00
	" Text-Book for Letters,	2.00
	Draughtsman's Alphabets.	2.00
	Gilders' Manual,	.50
	Haney's Book of Scrolls and Ornaments,	1.00
	" Manual of Sign, Carriage and Decorative Painting,	.50
	" New, Cheap Book of Alphabets,	.50
	Painters' Manual,	.50
	Prang's Alphabet, new edition,	5.00
	" State Arms of the Union,	2.00
	Standard Scroll Book,	1.00
	Students' Alphabet,	.25
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DRAWING COPIES.

(To be used with desk easel.)

Primary Drawing Copies . . . (For three lowest grades.) For introduction, 10 cents.

DRAWING BOOKS.

One book each for the 4th, 5th, 6th, 7th and 8th years of school. For introduction, $1.80 per dozen.

ALL ABOVE PRICES NET, WITH POSTAGE ADDED.

SECTION XI.

MATHEMATICAL INSTRUMENTS,

COMPRISING

FRENCH, GERMAN, SWISS, ALTENEDER'S, &c.

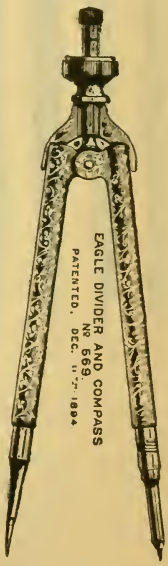
The "Hubbard" School Compass.

This is a 4¾ inch Divider, made of Brass and Steel, with a Patent Lead Point Holder made the right size to hold a 6 H Siberian lead, and is especially adapted to school use.

.35 each: $4.00 per dozen.

Eagle Divider and Compass.

Price, 25 Cents.



Nickel-Plated School Instruments.

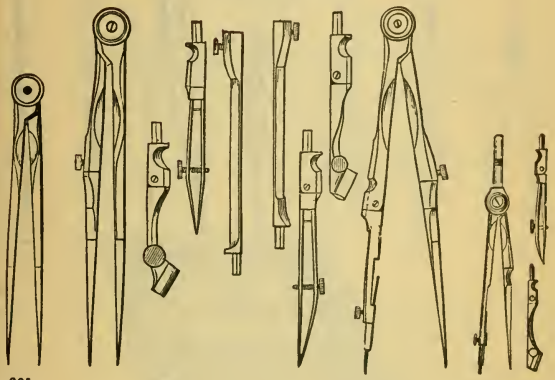
This line of low-priced instruments is a great improvement over the French instruments.

4200. 4201. 4205. 4508. 4210. 4211.

No. 4200.	Ruling Pen, Ebony Handle, 5 inch, . . .	each,	.15
No. 4201.	" White Bone Handle and Pin, 5½ inch,	"	.35
No. 4205	Dividers, 5½ inch, Nickel-Plated, ...	"	.30
No. 4208.	Compasses, 5½ inch, with Pencil Point, Nickel-Plated, ...	"	.45
No. 4210.	Compasses, 5½ inch, with Pencil and Pen Points, Nickel-Plated, ...	"	.60
No. 4211.	Compasses, 5½ inch, with Pencil and Pen Points, and Lengthening Bar, Nickel-Plated, . .	"	.75

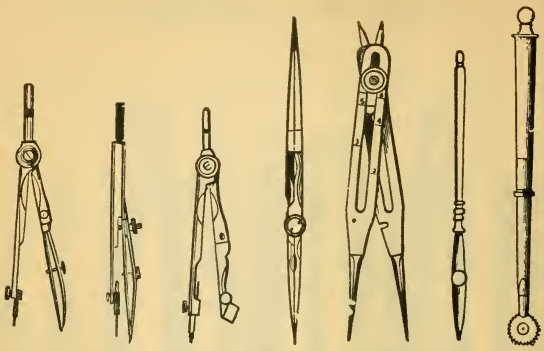
French Brass Instruments.

For Schools.



305. 314. 316. 318.

No. 305.	Dividers, Screw Joint, 3½ inches long, ...	.25
No. 306.	Dividers, Screw Joint, 4½ inches long, ...	.30
No. 307.	Dividers, Screw Joint, 5½ inches long, ...	.38
No. 308	Dividers, Screw Joint, 6½ inches long, ...	.45
No. 309.	Dividers, Rivet Head, 4½ inches long, ...	.20
No. 310.	Dividers, Rivet Head, 5½ inches long, ...	.30
No. 311.	Dividers, Rivet Head, 6½ inches long, ...	.35
No. 314.	Dividers, 4½ inches long, with Pen and Pencil Points and Lengthening Bar, ...	.60
No 315.	Dividers, 6 inches long, with Pen and Pencil Points and Lengthening Bar, ...	.75
No. 316.	Divivers, Needle Point, 4½ inches long, with Pen and Pencil Points, and Lengthening Bar, ...	.75
No. 317.	Dividers, Needle Point, 6 inches long, with Pen and Pencil Points, and Lengthening Bar, ...	1.00
No. 318.	Dividers, 3 inches long, with Pen and Pencil Points, .	.60



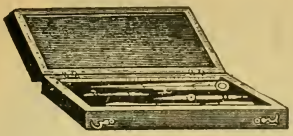
319. 320. 321. 322. 323. 325. 326.

No. 319.	Bow Pen, without Spring,	.60
No. 320.	Bow Pen, with Adjusting Screw and Spring,	.70
No. 321.	Bow Pencil, without Spring,	.60
No. 322.	Bisecting Dividers,	.60
No. 323.	Proportional Dividers, Half Divided,	2.25
No. 323½	Proportional Dividers, German Silver, Half Divided,	2.50
No. 324.	Drawing Pen, Black Handle,	.20
No. 325.	Drawing Pen, Ivory Handle,	.30
No. 326.	Roulette, for Dotting Lines,	.85

Cases of Brass Drawing Instruments.

For Schools.

No. 348.	Wood Box; 4½ inch Dividers, with Pen and Pencil Points, and Crayon Holder,	.60
No. 349.	Wood Box; 4½ inch Dividers, with Pen and Pencil Points, and Lengthening Bar; Ebony Handle Drawing Pen; Divided Wood Rule,	.90

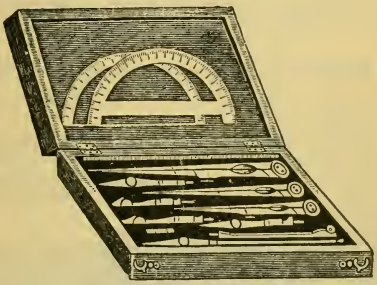


348.

No. 350. Wood Box: 4½ inch Dividers, with Pen and Pencil Points, and Lengthening Bar; 3½ inch Plain Dividers; Drawing Pen; Horn Protractor; Divided Wood Rule, ... $1.00

No. 351. Rosewood Box: 5½ inch Dividers, with Pen and Pencil Points, and Lengthening Bar; 4½ inch Plain Dividers, Drawing Pen; Horn Protractor; Divided Wood Rule, ... $1.50

No. 355. Rosewood Box: 6 inch Dividers, with Pen and Pencil Points, and Lengthening Bar; 4½ inch Plain Dividers; 3½ inch Dividers, with Pen and Pencil Points; Drawing Pen; Brass Protractor; Horn Protractor: Divided Wood Rule, ... $2.50



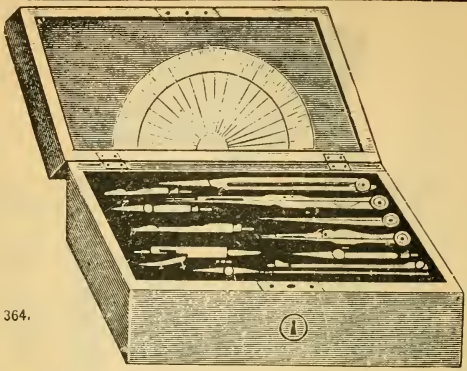
355.

No. 356. Same as No. 355, but with the Instruments set in a Tray, so that Colors, etc., may be put below, ... $3.25

No. 357. Rosewood Box: 6 inch Needle Point Dividers, with Pen and Pencil Points, and Lengthening Bar; 4½ inch Plain Dividers; 3½ inch Needle Point Dividers, with Pen and Pencil Points; Drawing Pen; Brass Protractor; Horn Protractor; Divided Wood Rule, ... $3.25

No. 358. Same as No. 357, but with Lock and Key, and the Instruments set in a Tray, so that Colors may be put below, ... $3.75

No. 362. Rosewood Box, with Lock and Key, the Instruments set in a Tray, so that Colors, etc., may be put below: 6 inch Needle Point Dividers, with Pen and Pencil Points, and Lengthening Bar; 4½ inch Plain Dividers; 3½ inch Needle Point Dividers, with Pen and Pencil Points; Spring Bow Pen, with Needle Point; Drawing Pen; Brass Protractor; Horn Protractor; Divided Wood Rule, ... $4.25



364.

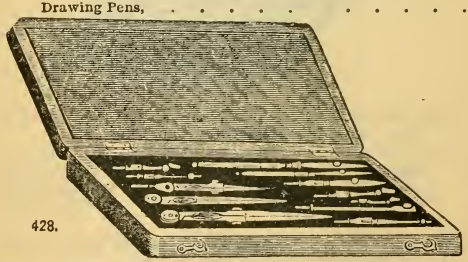
No. 364. Same as No. 362, with Proportional Dividers, Wood Triangle and Irregular Curves; without Brass Protractor, ... $7.50

Cases of Second Quality German Silver Instruments.

No. 425. Morocco Box: 5¼ inch Dividers, with Pen and Pencil Points; Drawing Pen, ... $2.80

No. 426. Morocco Box: 5½ inch Dividers, with Pen and Pencil Points, and Lengthening Bar; 5 inch Plain Dividers; Drawing Pen, $4.00

No. 427. Morocco Box: 5¼ inch Dividers, with Pen, Pencil and Needle Points, and Lengthening Bar; 5 inch Plain Dividers; 2 Drawing Pens, ... $5.40



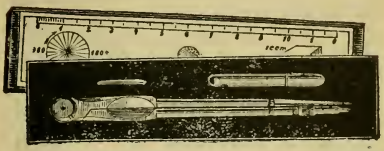
428.

No. 428 Morocco Box: 5¼ inch Dividers, with Pen, Pencil and Needle Points, and Lengthening Bar; 5 inch Plain Dividers; 4 inch Dividers, with Pen, Pencil and Needle Points; 2 Drawing Pens, ... $8.30

No. 429. Morocco Box: 5½ inch Dividers, with Pen, Pencil and Needle Points, and Lengthening Bar; 5 inch Plain Dividers; 4 inch Dividers, with Pen, Pencil and Needle Points; Spacing Dividers, Bow Pen, Bow Pencil, and 2 Drawing Pens, ... $12.10

Nickel-Plated Instruments.

In Velvet Lined Sliding Cases.

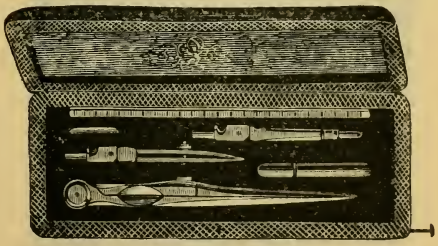


5104.

No.		Price.
5104.	One Divider, 4½ inch, with Fixed Patent Pencil Points, Box of Leads, and Key for Divider, for geometrical work and school use, ...	.30
5411.	Set containing Divider, 4½ inch, Patent Pencil and Pen Point, Box of Leads, and Key for Divider, in a wood box, ...	.50

Nickel-Plated School Instruments.

In Velvet Lined and Leatherette Covered Pocket Cases.



4440.

4440.	Case containing Divider, 4½ inch, with Pen and Pencil Points, Box of Leads, and Key for Divider, ...	.80
4438.	Similar to No. 4440, but Divider is only 3½ inches long,	.65

4441.

4441. Case containing Divider, 4½ inch, with Pen and Pencil Points, Ruling Pen, Rule and Protractor, Box of Leads, and Key for Divider, ...90

4439. Similar to No. 4441, but Divider is only 3½ inches long, . .70

4442.

4442. Case containing Divider, 4½ inch, with Pen and Pencil Points, Lengthening Bar, Ruling Pen, Rule and Proractor, Box of Leads, and Key for Divider, . . . $1.00

4443.

4443. Case containing Divider, 4½ inch, with Pen and Pencil Points, Ruling Pen, Plain Divider, Rule and Protractor, Box of Leads, and Key for Divider, ... $1.15

4444.

4444. Case containing Divider, 4½ inch, with Pen and Pencil Points, and Lengthening Bar, Plain Divider, Ruling Pen, Rule and Protractor, Box of Leads, and Key for Divider, ... $1.25

4445.

4445. Case containing Divider, 4½ inch, with Pen and Pencil Points, and Lengthening Bar, Plain Divider, 4 inch, Ruling Pen, Steel Spring Bow Pen, Rule and Protractor, Box of Leads, and Key for Divider, . . . $1.75

4446.

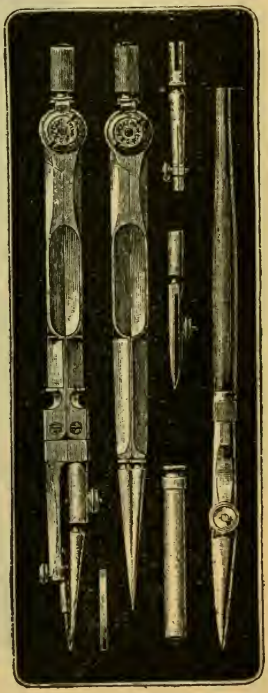
4446. Case containing Divider, 4½ inch, with Pen and Pencil Points, and Lengthening Bar, Plain Divider, 4 inch, and small Divider, 3½ inch, with Handle and Pen and Pencil Points, Ruling Pen, Rule and Protractor, Box of Leads, and Key for Divider, ... $1.75

NOTE.—All the Dividers of the above described sets of Nickel-Plated Instruments have the IMPROVED ROUND POINTS, which are not shown in the illustrations.

German Silver Instruments.

Improved Pattern, with Interchangeable Parts.

5000.



5001.

The Dividers are provided with Round Points and Patent Joint with Handle, in Leather Pocket Cases.

The Ruling Pens and Pen Points are ground to spring open, so as to be easily cleaned.

5000. Containing one Divider, 5½ inch, with fixed Needle Point, Pen and Pencil Points, Ruling Pen with Spring, Box of Leads and Key, ... $1.75

5001. Containing Divider, 5½ inch, with fixed Needle Point, Pen and Pencil Points, extra Divider, 5 inch, Ruling Pen with Spring, Box of Leads and Key, ... $2.00

5200.

5200. Loose set consisting of Divider, 5½ inch, with Pen and Pencil Points, Box of Leads and, Key for Divider, . $1.25

German Silver Instruments.

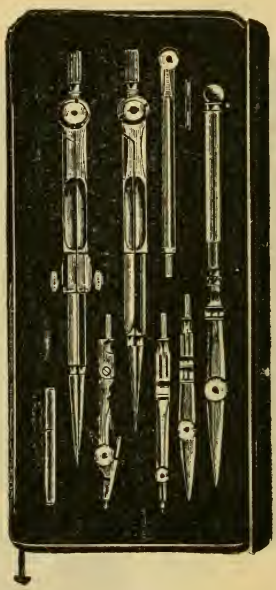
Dividers with Patent Handles and Improved Round Points and Patent Joint, with Handle in Leather Pocket Cases; Ruling Pens and Pen Points with hinge.

5041.

5042

5041. Containing Divider, 5½ inch, with fixed Needle Point, Pen and Pencil Points and Lengthening Bar, Plain Divider, 5 inch, Ruling Pen with Joint, Box of Leads and Key, $3.75

5042. Containing Divider, 5½ inch, with fixed Needle Point, Pen and Pencil Points, Plain Divider, 5 inch, one Steel Spring Bow Pen, Ruling Pen with Joint, Box of Leads and Key, ... 4.00

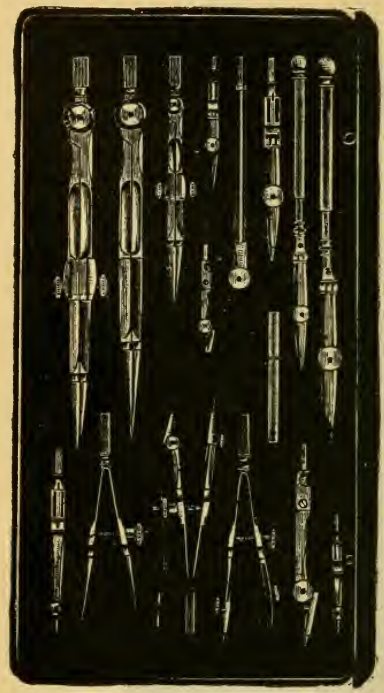


5043

5043. Containing Divider, 5½ inch, with Pen, Pencil and Needle Point Parts, and Lengthening Bar, both legs changeable, Plain Divider, 5 inch, Ruling Pen with Joint, Box of Leads and Key, ... $4.00

5044.

5044. Containing Divider, 5½ inch, with fixed Needle Point, Pen and Pencil Points and Lengthening Bar, Divider, 5 inch, with Hair-Spring Attachment, one Steel Spring Bow Divider, one Steel Spring Bow Pen, one Steel Spring Bow Pencil, large Ruling Pen with Joint, small Ruling Pen with Joint, Box of Leads and Key, ... $6.00



5045.

5508½.

5045. Containing Divider, 5½ inch, with Needle Point, Pen and Pencil Points and Lengthening Bar, both legs changeable, extra Divider, 5 inch, small Divider, 3½ inch, with Needle Point, Pen and Pencil Parts, one Steel Spring Bow Divider, one Steel Spring Bow Pen, one Steel Spring Bow Pencil, large Ruling Pen with Joint, small Ruling Pen with Joint, Box of Leads and Key, $8.00

5508½. Loose set, consisting of Divider, 5½ inch, with Pen and Pencil Points, Box of Leads and Key for Divider. A fine and desirable set for schools, ... $1.75

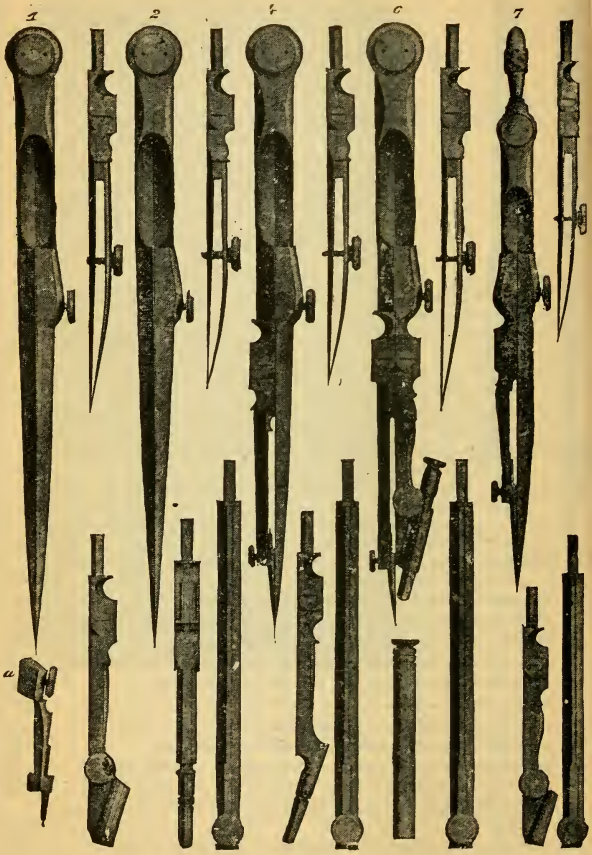
Frost & Adams Co's

GERMAN INSTRUMENTS,

Of German Silver, Superior Quality and Highly Finished.

SEPARATE INSTRUMENTS.

No		Price.
1.	Dividers, 5½ inches long, with pen and pencil points and a needle-point attachment,	$2.00
2.	Dividers, 5½ inches long, with pen and pencil points and lengthening-bar,	2.50
4.	Dividers, 5½ inches long, with fixed needle-point, pen and pencil points, and lengthening-bar,	3.00
6.	Dividers, 5½ inches long, with fixed needle-point, pen and pencil points (to fit either lead or pencil), and lengthening-bar,	2.75
7.	Dividers, 5½ inches long, with fixed needle-point, pen and pencil points, and lengthening-bar with handle-joint,	3.25
8.	Dividers, 5½ inches long, with pen, pencil and needle points, and lengthening-bar,	3.25
9.	Dividers, 5½ inches long, joint in each leg, with pen, pencil and needle points, and lengthening-bar,	4.00
10.	Lithograph Dividers, with bow circle, pen, pencil, plain points, and micrometer adjustment,	12.00
12.	Dividers, 3½ inches long, with pen and pencil points,	2.00
13.	Dividers, 3½ inches long, with fixed needle-point, pen and pencil points,	2.25
14.	Dividers, 3½ inches long, pen, pencil and needle points,	2.50
15.	Spring Bow Dividers, ivory handle, two pens, pencil and needle points,	4.25
16.	Spring Bow Dividers, with pen, pencil and needle-points,	3.25
17.	Spring Bow Dividers, needle-point, with pen and pencil attached,	3.00
18.	Bow Pen, with spring and adjusting-screw,	1.50
19.	Bow Pen, hinge to pen, with spring and adjusting-screw,	1.50
20.	Bow Pen, hinge to pen, jointed, with spring and adjusting-screw,	1.75
21.	Bow Pen, with spring and adjusting-screw, and with pencil points,	2.25
22.	Bow Dividers, with spring and adjusting-screw, with pen and pencil attached,	2.25
23.	Bow Pen, with spring and adjusting-screw, long ivory handle,	1.60
24.	Steel Spacing Dividers, ivory handle,	1.25
25.	Steel Bow Pencil, with needle-point and ivory handle,	1.75
26.	Steel Bow Pen, with needle-point and ivory handle,	1.75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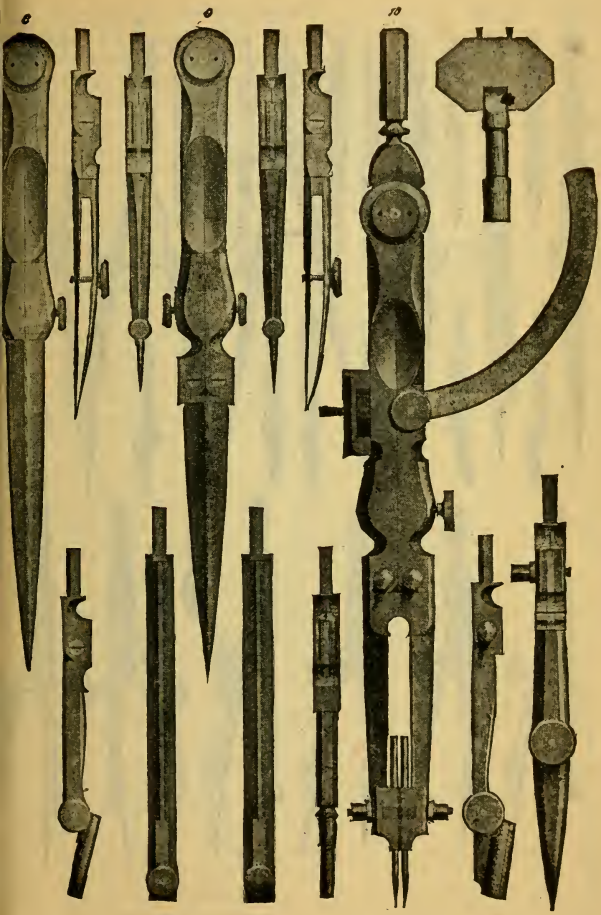

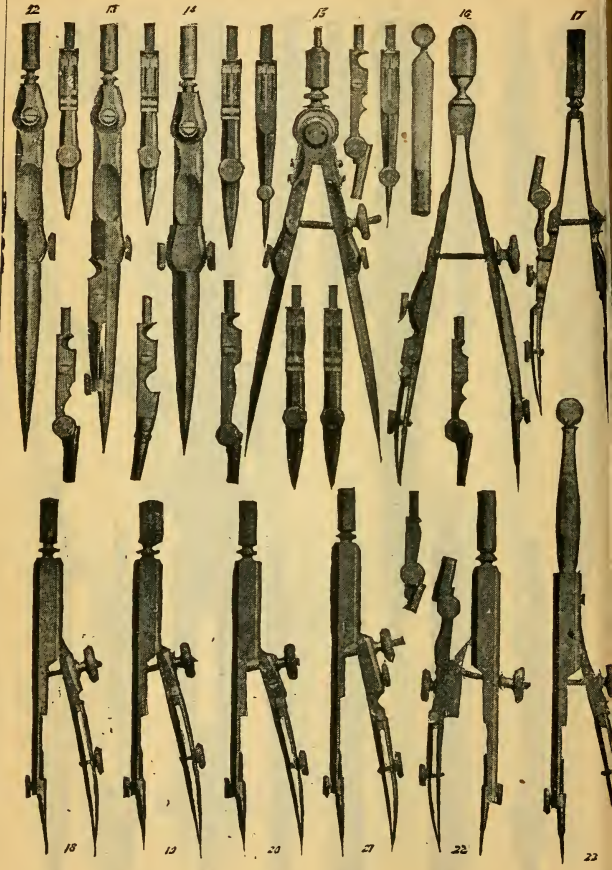
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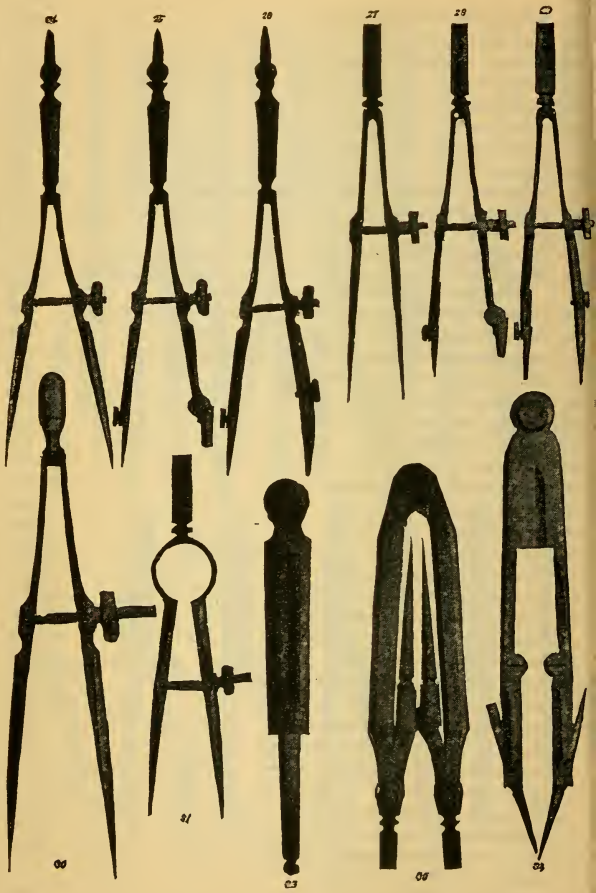
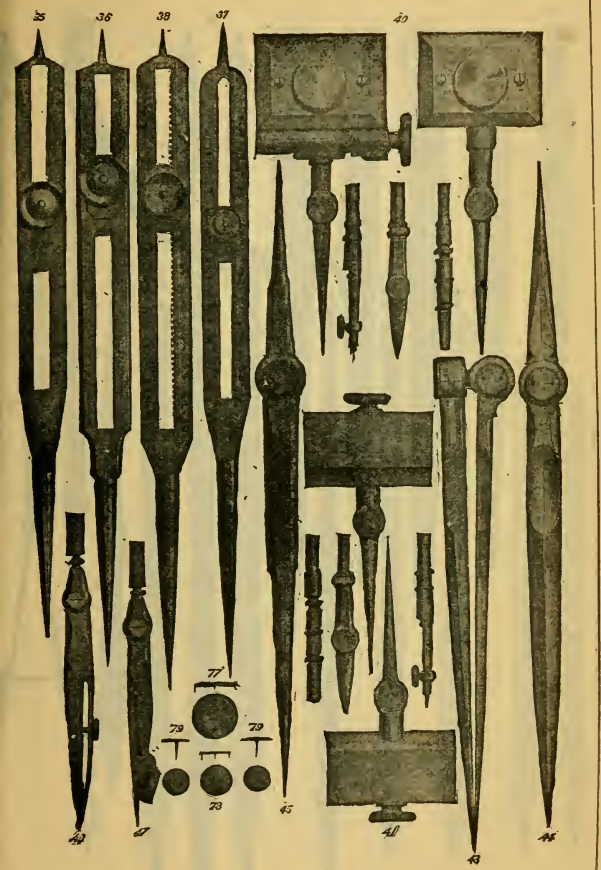
No.		Price.
27.	Steel Spacing Dividers, 3 inches long,	$1.50
28.	Steel Bow Pencil, needle-point, 3 inches long,	1.75
29.	Steel Bow Pen, needle-point, 3 inches long,	1.75
30.	Steel Spacing Dividers, 5 inches long, with metal handle,	2.25
31.	Steel Spacing Dividers, circular spring,	1.60
32.	Pocket Dividers, with sheath,	5.00
33.	Pocket Dividers, with folding points,	7.50
34.	Pocket Dividers, with folding pen and pencil points,	6.50
35.	Proportional Dividers, 6½ inches long, finely graduated for lines,	4.25
36.	Proportional Dividers, 6½ inches long, finely graduated for lines and circles,	8.50
37.	Proportional Dividers, finely graduated for lines and circles,	9.00
38.	Proportional Dividers, finely graduated for lines and circles, 9 inches long, with micrometer adjustment and rack,	11.00
40.	Beam Compass, with adjusting-screw, pen, pencil and needle points,	7.00
41.	Beam Compass, with pen, pencil and needle points,	6.00
42.	Beam Compass, with pen, pencil and needle points, and bar,	8.00
43.	Three-Legged Dividers. 5 inches long,	3.50
44.	Bisecting Dividers, 5 inches long,	2.50
45.	Bisecting Dividers, 5 inches long,	2.25
46.	Bow Pen, 3 inches long,	1.00
47.	Bow Pencil, 3 inches long,	1.00
48.	Plain Dividers, 3½ inches long,	1.00
50.	Plain Dividers, 5 inches long,	1.00
51.	Plain Dividers, 6 inches long,	1.25
52.	Dividers, with graduated bow circle, 5½ inches long,	2.50
55.	Dividers, with shield for pocket,	2.00
57.	Dividers, 4 inches long, hair-spring,	1.50
58.	Dividers, 5 inches long, hair-spring,	1.75
59.	Dividers, 6 inches long, hair-spring,	2.00
60.	Ruling Pen, 5½ inch,	1.00
61.	Ruling Pen, 5½ inch, with hinge and pin,	.75
62.	Ruling Pen, 5½-inch, with hinge,	.65
63.	Ruling Pen, 5 inch, with hinge and pin,	1.00
64.	Ruling Pen, 4 inch, with hinge and pin,	.85
65.	Ruling Pen, 4 inch, with hinge,	.65
66.	Ruling Pen, 5 inch,	.50
67.	Ruling Pen, 5½ inch, with pin,	.65
70.	Ruling Pen, with three adjustable points,	1.25
71.	Ruling Pen, with five adjustable points,	2.00
72.	Ruling Pen, 5-inch metal handle,	.75
73.	Ruling Pen, 6-inch metal handle,	1.00
74.	Railroad Pen, ivory handle,	2.25
76.	Dotting Pen,	.90

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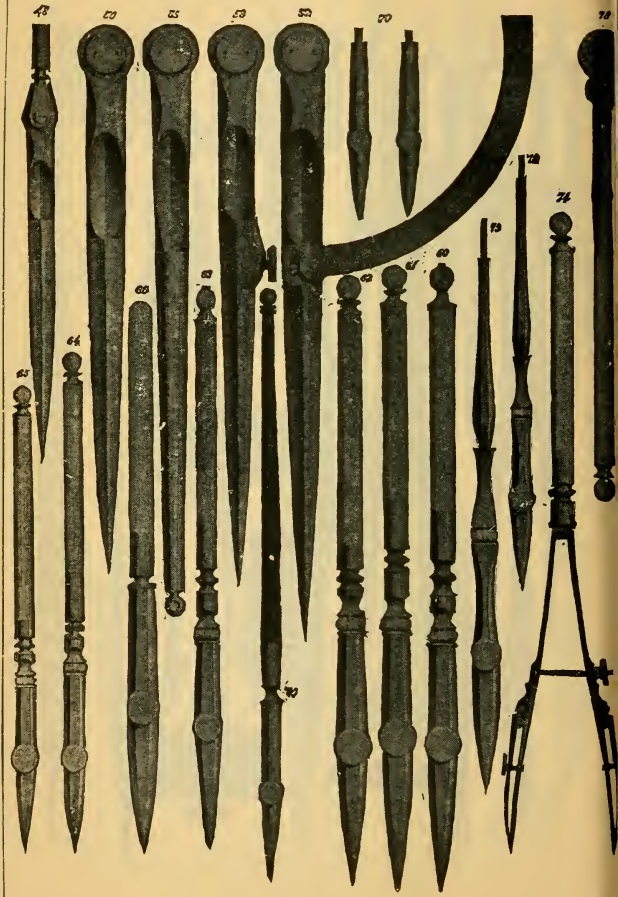
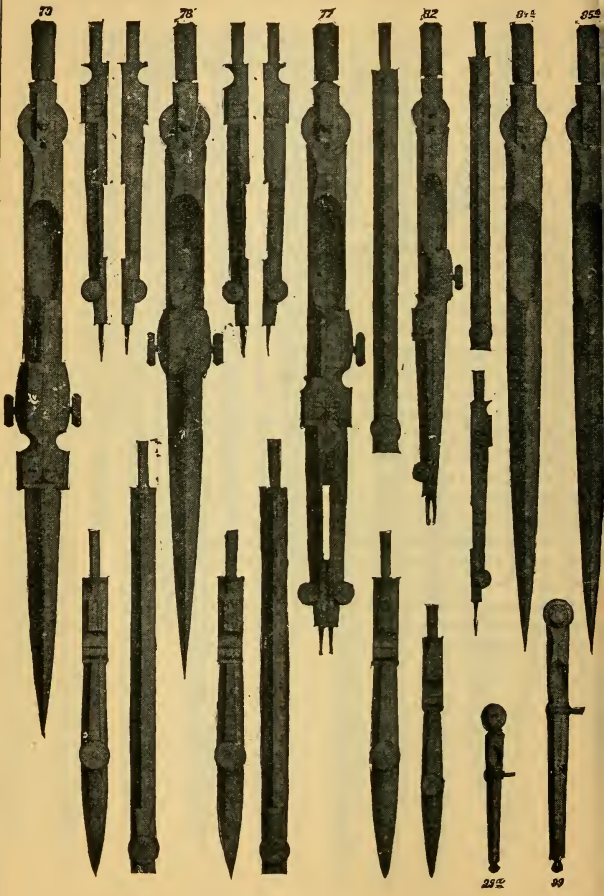


No.		Price.
77.	Needle Point Dividers, 6 inch, pen and pencil point and lengthening bar,	$5.50
78.	Dividers, 6½ inches long, with pen, pencil, needle points and lengthening bar,	6.50
79.	Dividers, 6½ inches long, joint in each leg, with pen, pencil, needle points and lengthening bar,	9.50
80.	Needle Point Dividers, 3½ inches long, with pencil point,	3.50
80A.	Needle Point Dividers, 3½ inches long, with pen point,	3.50
81.	Dividers, 3½ inches long, with fixed needle point and pen and pencil point,	5.00
82.	Dividers, 4½ inches long, with needle point, pen, pencil point and lengthening bar,	6.00
83.	Dividers, 3½ inches long, with pen, pencil and needle point,	5.50
84.	Plain Dividers, 3½ inches long,	1.50
84A.	Plain Dividers, 5 inches long,	1.75
84B.	Plain Dividers, 6 inches long,	2.25
85.	Hair Spring Dividers, 3½ inches long,	2.25
85A.	Hair Spring Dividers, 5 inches long,	2.75
85B.	Hair Spring Dividers, 6 inches long,	3.25
86.	Spring Bow Pen, for very small circles,	3.00
87.	Spring Bow Pencil, for very small circles,	3.00
88.	Spring Bow Pen and Pencil, for very small circles,	4.00
89.	Ruling Pen, 4¼ inches, black handle,	1.00
90.	Ruling Pen, 5 inches, black handle,	1.25
91.	Ruling Pen, 4 inches, black handle,	1.00
92.	Ruling Pen, 4¼ inches, black handle and plotty point,	1.00
93.	Ruling Pen, 4¾ inches, black handle and plotty point,	1.25
94.	Ruling Pen, 5½ inches, black handle and plotty point,	1.50
95.	Ruling Pen, 6¼ inches, black handle and plotty point,	1.75
96.	Improved Curve Pen,	1.75
97.	Improved Drawing Pen, without set screw,	1.50
98.	Improved Railroad Pen,	4.50
99.	Pocket Divi[illegible]	1.00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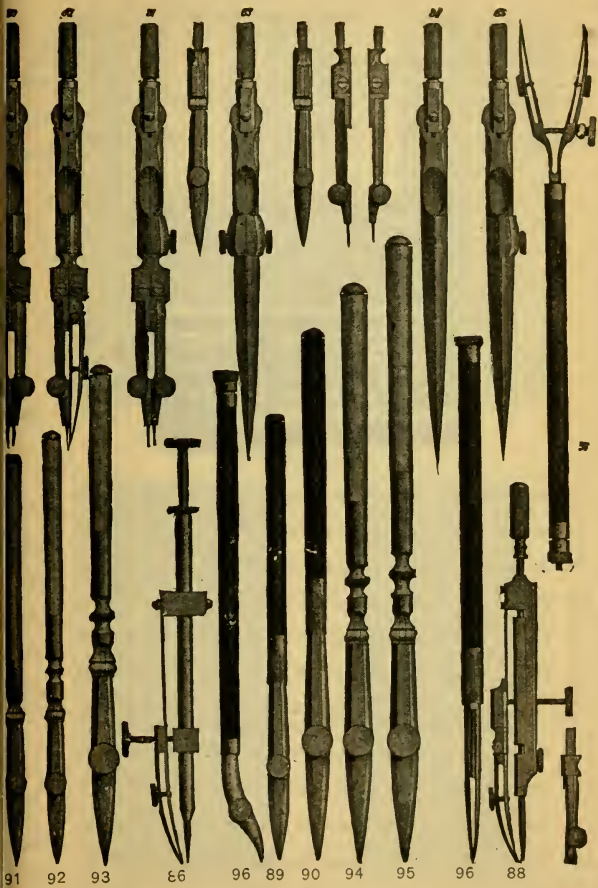
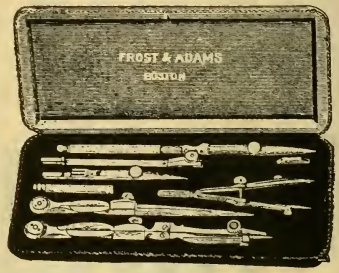


107½

CASES OF GERMAN INSTRUMENTS

No.		Price.
100.	Morocco Pocket Case, containing No. 1,	$2.50
101.	Morocco Pocket Case, containing No. 1 and No. 65,	3.25
102.	Morocco Pocket Case, containing No. 1, No. 50, and No. 65, with leads,	4.00
103	Morocco Pocket Case, containing No. 2, No. 50, and No. 65, with leads,	4.50



No. 109¾.

104.	Morocco Pocket Case, containing No. 5, No. 50, and No. 65, with leads,	4.75
105.	Morocco Pocket Case, containing No. 6, No. 50, and No. 65, with leads,	5.00
106.	Morocco Pocket Case, containing No. 8, No. 50, and No. 61, with leads,	6.00
107.	Morocco Pocket Case, containing No. 1, No. 50, No. 19, and No. 63, with leads,	6.00
108.	Morocco Pocket Case, containing No. 2, No. 50, No. 19, and No. 63, with leads,	6.50
109.	Morocco Pocket Case, containing No. 6, No. 19, No. 50, and No. 63, with leads,	6.75
109¾.	Morocco Pocket Case, containing No. 6, No. 58, No. 29, and No. 63, This set is particularly adapted to students in the evening drawing schools.	7.50
110.	Morocco Pocket Case, containing No. 8, No. 19, No. 50, and No. 61, with leads,	7.50
111.	Morocco Pocket Case, containing No. 8, No. 21, No. 50, and No. 61, with leads,	8.50
112.	Morocco Pocket Case, containing No. 2, No. 12, No. 50, and No. 61, with leads,	8.50
113.	Morocco Pocket Case, containing No. 2, No. 14, No. 50, and No. 61, with leads,	8.00
114.	Morocco Pocket Case, containing No. 8, No. 14, No. 50, and No. 61, with leads,	10.00

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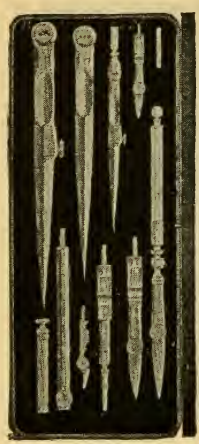

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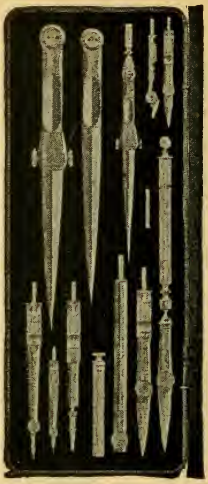

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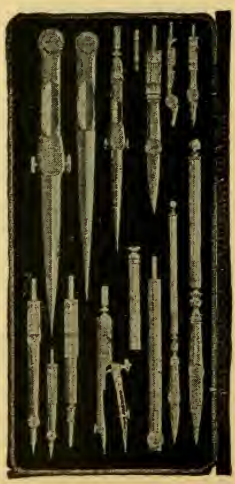

No.		Price.
115.	Morocco Pocket Case, containing No. 8, No. 14, No. 50, No. 61, and No. 65, with leads,	$10.00
116.	Morocco Pocket Case, containing No. 8, No. 14, No. 19, No. 50. No. 61, and No. 65, with leads,	11.50
117.	Morocco Pocket Case, containing No. 8, No. 14, No. 19, No. 50, No. 58, No. 61, and No. 64, with leads,	14.00
118.	Morocco Pocket Case, containing No. 8, No. 14, No. 19, No. 44, No. 50, No. 58, No. 61, and No. 64, with leads,	18.00
119.	Morocco Pocket Case, containing No. 8, No. 14, No. 19, No. 44, No. 48, No. 50, No. 58, No. 61, and No. 64, with leads,	19.00
120.	Morocco Pocket Case, containing No. 8, No. 14, No. 19, No. 44, No. 48, No. 50, No. 58, No. 61, No. 64, and No. 70, with leads,	21.50
121.	Morocco Pocket Case, containing No. 8, No. 14, No. 24, No. 25, No. 28, No. 35, No. 48, No. 50, No. 58, No. 61, No. 64, and No. 74, with leads,	30.00
122.	Morocco Pocket Case, containing No. 24, No. 25, and No. 26,	5.00
123.	Morocco Pocket Case, containing No. 14,	3 00
124.	Morocco Pocket Case, containing No. 14 and No. 64,	4.50
125.	Morocco Pocket Case, containing No. 14, No. 48, and No. 64,	4.75
126.	Morocco Pocket Case, containing No. 14, No. 24, and No. 64,	5.25
127.	Morocco Pocket Case, containing No. 15 and No. 64,	5.50
128.	Morocco Pocket Case, containing No. 14, No. 26, No. 48, and No. 64,	6.00
129.	Morocco Pocket Case, containing No. 14, No. 21, No. 48, and No. 64,	8.00
130.	Morocco Pocket Case, containing No. 7, No. 23, No. 50, and No. 60,	7.00

No. 130½.

130½	Special set. Morocco Pocket Case, containing No. 8, No. 58, No. 27, No. 28. No. 29, No. 61, and No. 65,	12.50

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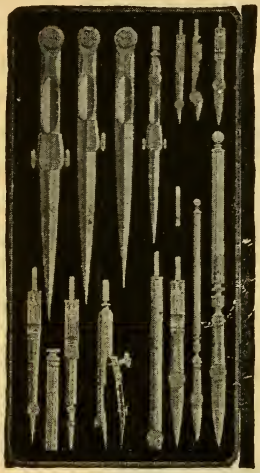

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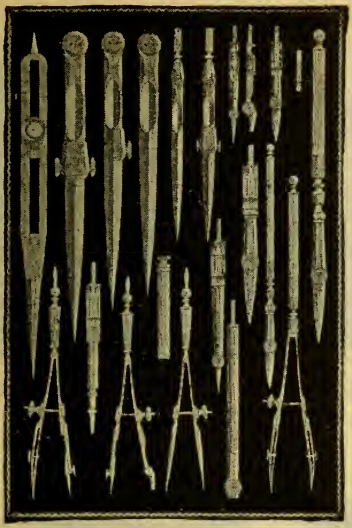

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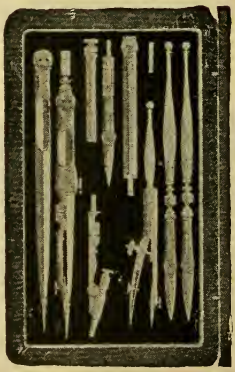

No.		Price.
131.	Morocco Pocket Case containing Nos. 6, 50, 21, 70,	$8.75
132.	Morocco Pocket Case containing Nos. 8, 50, 22, 63, 64,	9.75
133.	Morocco Pocket Case containing Nos. 8, 58, 63, 64, 27, 28, 29,	13.25
134.	Morocco Pocket Case containing Nos 8, 50, 14, 63, 64, 24, 25, 26,	15.00
135.	Morocco Pocket Case containing Nos. 8, 58, 14, 63, 64, 20, 37,	21.50
136.	Morocco Pocket Case containing Nos. 8, 50, 14, 37, 63, 64, 70, 42, 24, 25, 26,	33.00
137.	Morocco Pocket Case containing Nos. 77, 85a, 89, 90, 27, 28, 29,	17.25
138.	Morocco Pocket Case containing Nos. 78, 85a, 89, 90, 27, 28, 29,	18.25
140.	Morocco Pocket Case containing Nos. 14, 64,	4.25
141.	Morocco Pocket Case containing Nos. 14, 64, 48, 29,	7.00
142.	Morocco Pocket Case containing Spring Bow Spacer, Pen and Pencil, 4 inches,	6.00
143.	Morocco Pocket Case containing Spring Bow Spacer, Pen and Pencil, ivory top, 3½ inches,	5.00
144.	Morocco Pocket Case containing three minute Spring Bow Spacers, Pen and Pencil,	4.00

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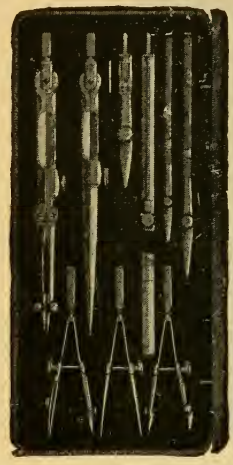

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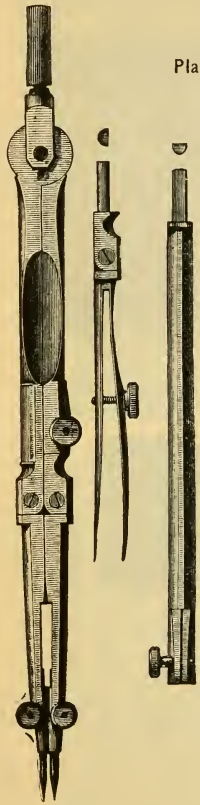
N. B. Separate instruments may be selected, and special cases made TO ORDER.

Frost & Adams Co's Superior Compasses,

(SWISS MAKE,)

Plain, with Pivot Joint Handles.



No. 1, F. & A.

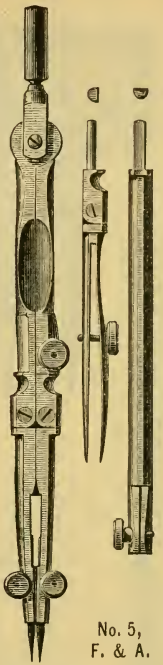
Our drawing instruments are made of hard German silver and the very best steel that can be obtained. The steel is well worked and carefully tempered and adjusted. Every instrument is warranted.

No. 1, F. & A. Dividers, 6 inch fixed needle point, with pen and pencil and lengthening bar, . . .	$7.25
No. 2, F. & A. Dividers, 3½ inch fixed needle point, with pen and pencil and lengthening bar, . . .	6.50
No. 3, F. & A. Dividers, plain, 6 inch, ...	2.50
No. 4, F. & A. plain Dividers, 3½ inch, ...	2.25

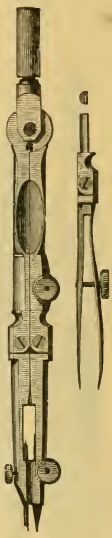
Frost & Adams Co's Superior Compasses.

No. 3,
F. & A.

No. 7,
F. & A.



No. 5,
F. & A.

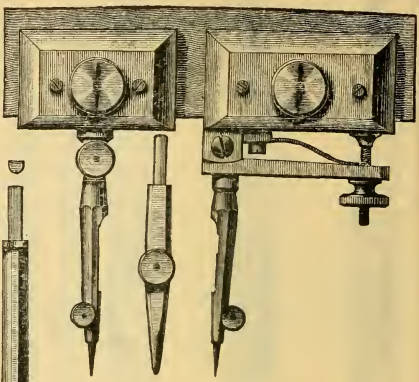


No. 2,
F. & A.

No. 5, F. & A. Compasses, 4½ inch with fixed needle point, pen, pencil point and lengthening bar, .	$6.75
No. 6, F. & A. plain, hinged joint Dividers, 3½ inch, . . .	3.25
No. 7, F. & A. hair spring, hinged joint Dividers, 5 inch, . . .	5.00
No. 8, F. & A. hair spring, hinged joint Dividers, 3½ inch, . .	4.50
No. 9, F. & A. hair spring Dividers, 6 inch, ...	4.00

Frost & Adams Co's Superior Compasses.

No. 11. F. & A.



No. 13. F. & A.

No. 10, F. & A. hair spring Dividers, $3\frac{1}{2}$ inch, ... $3.50

No. 11, F. & A. Dividers, 6 inch, with fixed needle point, pen, pencil and lengthening bar, and with hair spring attachment on needle point leg, ... 9.00

No. 12, F. & A. Dividers, $3\frac{1}{2}$ inch, with fixed needle point, pen, pencil and lengthening bar, and with hair spring attachment on needle point leg, ... 7.50

No. 13, F. & A. Beam Compass with needle point, pen and pencil, and with improved micrometer adjustment, ... 7.75

No. 14, F. & A. Beam Compass, large, with needle point, pen and pencil, and with improved micrometer attachment, ... 8.75

Morocco Case for same, ... 1.00

Frost & Adams Co's Superior Compasses.

No. 15, F. & A.

No. 15½, F. & A.

No. 15 F. & A. Improved Railroad Pen with centre adjustment, with 5-inch ebony handle, ... $4.50

Frost & Adams Co's Superior Compasses.

No. 17, F. & A.

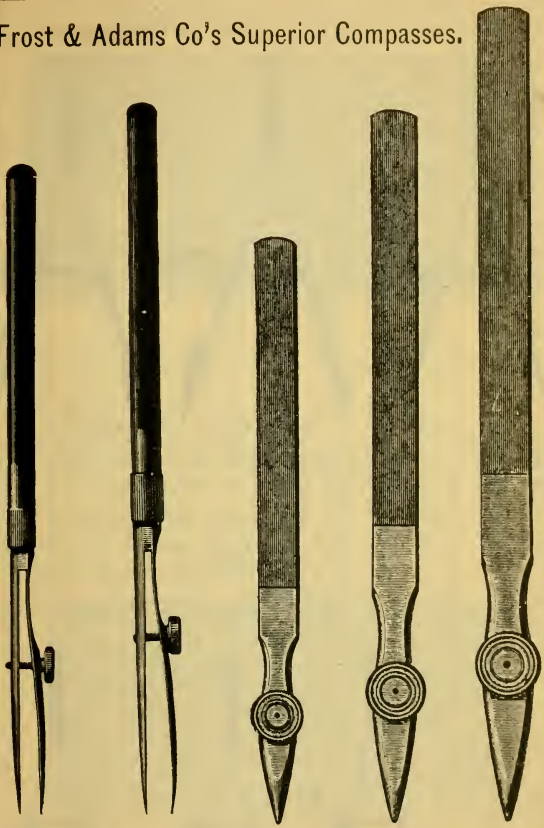
No. 18, F. & A.

No. 19, F. & A.

No. 20, F. & A.

No. 16, F. & A.	Improved Dotting Pen with one set of wheels, six varieties, ...	$1.75
No. 17, F. & A	Ruling Pen, 4-inch ebony handle, . . .	1.25
No. 18, F. & A.	" 5-inch "	1.35
No. 19, F. & A.	" 5½-inch "	1.65
No. 20, F. & A.	" 4½-inch " with spring nib,	1.40

Frost & Adams Co's Superior Compasses.



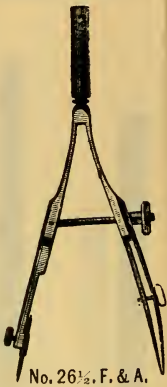
No. 21, F. A. No. 22, F. A. No. 23, Swedish Style.

No. 21, F. & A. Ruling Pen, 5-inch ebony handle, with spring nib,	$1.65
No. 22, F. & A. Ruling Pen, 5½-inch ebony handle, with spring nib,	1.90
No. 23, Swedish Style Drawing Pens for Broad Lines:	
Drawing Pen, ebony handle, 5 inch, ...	1.75
Drawing Pen, " 6 "	2.00
Drawing Pen, " 7 "	2.25

Frost & Adams Co's Superior Compasses.

No. 24½, F. & A.

No. 25½ F. & A.



No. 26½, F. & A.

No 27.
F. & A.

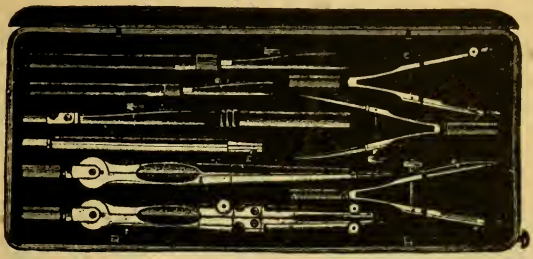
No. 24.	F. & A. Spacing Dividers, plain, 3 inch, metal handle, ...	$1.75
No. 24½.	F. & A. Spacing Dividers, 3½ inch, metal handle, ...	2.00
No. 25.	F. & A. Bow Pencil, needle point, 3 inch, metal handle, ...	2.50
No. 25½.	F. & A. Bow Pencil, needle point, 3½ inch, metal handle, ...	2.50
No. 26.	F. & A. Bow Pen, needle point, 3 inch, metal handle, ...	2.50
No. 26½.	F. & A. Bow Pen, needle point, 3½ inch, metal handle, ...	2.50
No. 27.	F. & A. Pricker Point, ...	2.25

No. 24, F. & A.

No. 25, F. & A.

No. 26, F. & A.

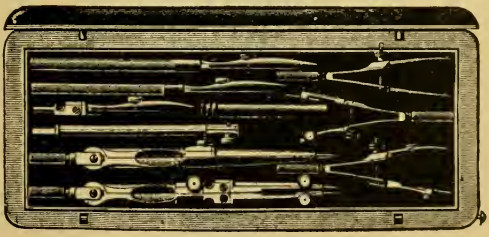
Frost & Adams Co's College Set.



No. 28. F. & A.

Frost & Adams' "specially selected College Set" is made from the best rolled German silver and the finest tempered steel. Every instrument is warranted.

1 Pair Compasses, 5½ inch, with fixed needle point, pen, pencil point and lengthening bar, No. 1.
1 Hair Spring Divider, 5 inch, round points, No. 7.
1 Steel Spring Bow Divider, metal handle, 3½ inch, No. 24½.
1 " Bow Pencil, " " No. 25½.
1 " Bow Pen, " " No. 26½.
1 Drawing Pen, 4½ inch, No. 20.
1 " 5 " No. 21. 1 German silver Box for Leads.
All in silk velvet-lined morocco case, ... $23.50

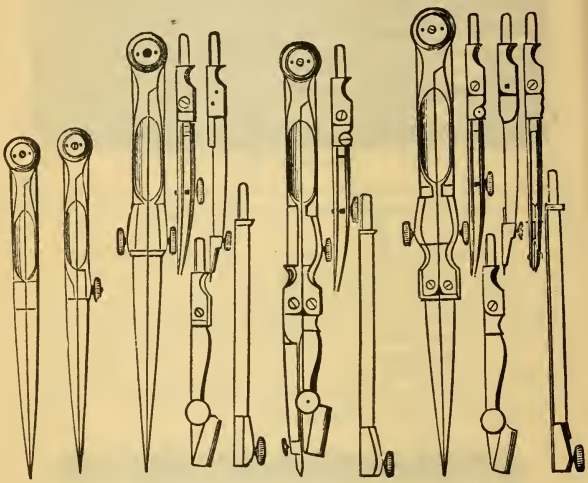


No. 29, F. & A.

1 Pair Compasses, 4½ inch, with needle point, pen, pencil point and lengthening bar.
1 Hair Spring Divider, 4½ inch.
1 Spring Bow Divider, 3 inch.
1 " Pen, "
1 " Pencil, "
2 Drawing Pens. Box for Leads.
All in a morocco case, velvet lined, ... 20.00

Kern's Swiss Instruments,

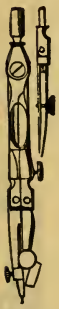
Of Best German Silver and English Steel. Extra Fine Finish.



451. 453. 455. 455 1-2. 456.

No. 451.	Plain Dividers, 4½ inches long,	$1.50
No. 452.	Plain Dividers, 5 inches long,	$1.75
No. 452½.	Plain Dividers, 6 inches long,	$2.50
No. 453	Hair Spring Dividers, 4½ inches long,	$2.25
No. 454.	Hair Spring Dividers, 5 to 6 inches long,	$2.50
No. 455.	Dividers, 6½ inches long, with Pen, Pencil and Needle Points, and Lengthening Bar,	$6.50
No. 455½.	Dividers, 6½ inches long, with Fixed Needle Point, Pen and Pencil Points, and Lengthening Bar,	$6 00
No. 456.	Dividers, 6½ inches long, Joints in each leg, with Pen, Pencil and Needle Points, Dotting Pen and Lengthening Bar.	$9.00

457



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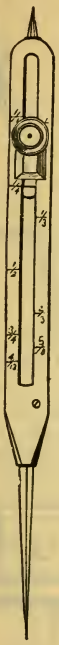

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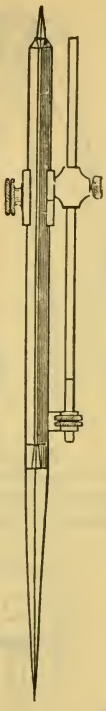

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461.

No. 457. Dividers, 4 inches long, with Pen, Pencil and Needle Points, . $5.00

No. 457½. Dividers, 4 inches long, with Fixed Needle Point, Pen and Pencil Points, changeable, ... $4.50

No. 457¾. Proportional Dividers, 6½ inches long, Finely Graduated for Lines, ... $8.00

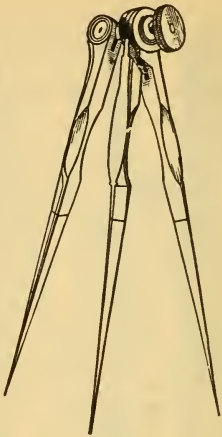
No. 458. Proportional Dividers, Finely Graduated for Lines and Circles, 9 inches long, ... $10.00

No. 459. Proportional Dividers, Finely Graduated for Lines and Circles, 9 inches long, with Micrometer Adjustment, ... $12.00

No. 460. Proportional Dividers, Graduated for Lines, 8 inches long, with Rack Adjustment, ... $10.50

No. 461. Bisecting Dividers, 7½ inches long, ... $4.25

462.



463.

464.

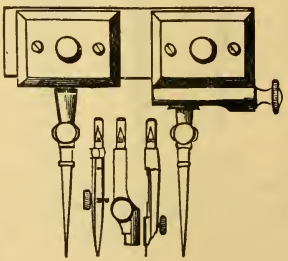
No. 462. Pocket Dividers, 5 to 6 inches long, with Sheath, . . $2.40

No. 463. Triangular Compasses, for taking off three points, $4.25

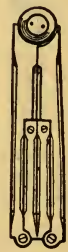
No. 464. Steel Spacing Dividers, 5 inches long, with Ivory Handle, $2.50

465.

465 1-2.



470 1-2.



471.

No. 465 Steel Spacing Dividers, 3½ inches long, with Ivory Handle, $1.50

No. 465½. Steel Spacing Dividers, 3½ inches long, with Ivory Handle, Needle Points, ... $2.50

No. 470. Furniture for Wood Beam Compasses, in Morocco Box, . . $7.75

No. 470½. Furniture for Wood Beam Compasses, without Morocco Box, . $6.75

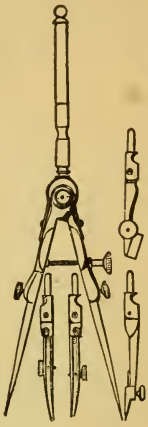
No. 471. Pocket Compasses, to fold, with Points to change, ... $7.50

473.

473 1-2.

474.

475.



476.

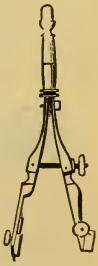
No. 473. Spring Bow Pen, all Steel, Ivory Handle, ... $2.00
No. 473½. Spring Bow Pen, all Steel, Ivory Handle, ... $2.40
No. 474. Spring Bow Pen, German Silver, ... $2.00
No. 475. Spring Bow Pen, German Silver, with Pencil Point. . . . $3.00
No. 476. Spring Bow Pen, 4 inches long, with Ivory Handle, Pencil, Needle, and two Pen Points, ... $7.00

477.

478.

478 1-2.

479.

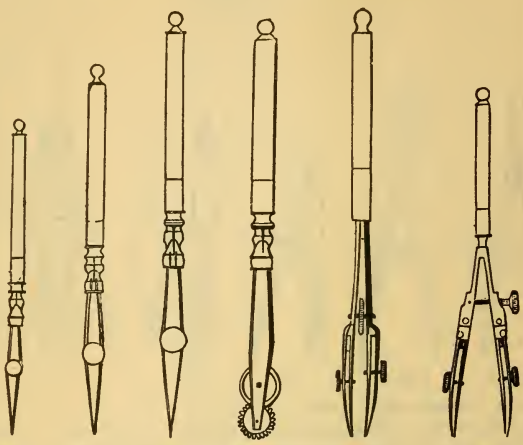


479 1-2.

No. 477. Bow Pen, with Needle Point, and Joint in each Leg, ... $3.00
No. 478. Bow Pencil, with Needle Point, and Joint in each Leg, . . . $3.00
No. 478½. Bow Spacer, with Needle Point, and Joint in each Leg, . . . $3.00

No. 479. Spring Bow Pencil, Ivory Handle, ... $2.00

No. 479½. Spring Bow Pencil, Ivory Handle, and Needle Point, . . . $2.40



480. 481. 482. 483 484. 485.

No. 480. Drawing Pen, 4½ inches long, with Joint and Pin, ... $1.25

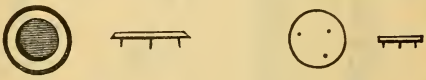
No. 481. Drawing Pen, 5½ inches long, with Joint and Pin, ... $1.40

No. 482. Drawing Pen, 6½ inches long, with Joint and Pin, ... $1.60

No. 483. Dotting Pen, with one Wheel, ... $2.00

No. 484. Railroad, or Double Drawing Pen, ... $3.75

No. 485. Railroad, or Double Drawing Pen, with Joint in each Side, . $3.00



486. 488.

No. 486. Horn Centre, with German Silver Edges, ...40

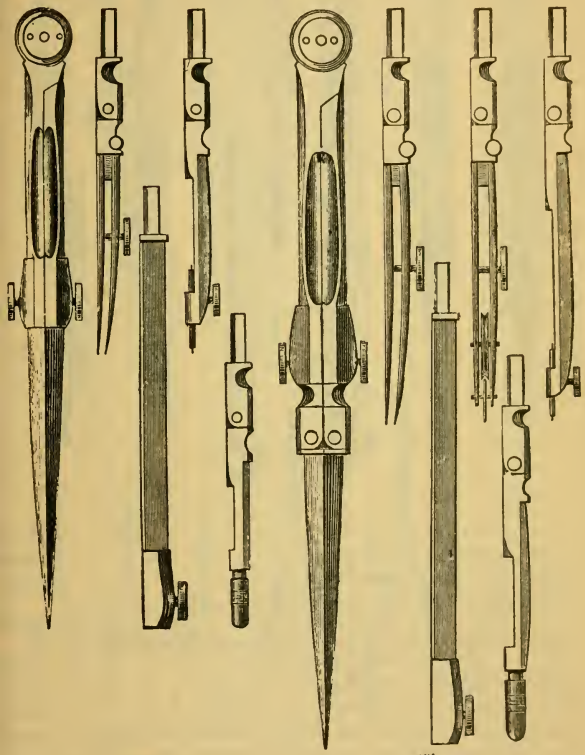
No. 487. German Silver Centre, with Handle, ...30

No. 488. Horn Centre, Plain, ...13

NOTE.—In compiling this Catalogue, we have enumerated only a small selection from our regular stock of Mathematical Instruments in cases, either of the cheaper or of the more expensive kinds; and, therefore, parties who are about supplying themselves with this kind of goods would do well to call and examine what we have in stock.

Superior Swiss Instruments.

Made from Best German Silver and English Steel.



489. 491.

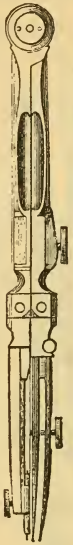
No. 489. Dividers, 6 inches long, with Pen, Pencil and Needle Points, and Lengthening Bar, ... $8.00

No. 490. Dividers, 6½ inches long, with Joint in each Leg, Pen, Pencil and Needle Points, and Lengthening Bar, ... $9.25

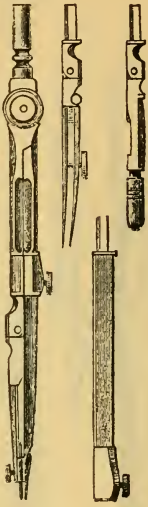
No. 491. Dividers, 7 inches long, with Joint in each Leg Pen, Pencil and Needle Points, Lengthening Bar, and Dotting Pen, . . . $10.75

492.

494.



495.



496.

No. 492. Plain Dividers, 5 inches long, ... $2.20

No. 493. Plain Dividers, 6 inches long, ... $2.75

No. 494. Hair Spring Dividers, 5 inches long, ... $3.00

No. 495. Dividers, 5½ inches long, with Fixed Needle Point, Pen and Pencil Points, and Lengthening Bar, ... $7.00

No. 496. Dividers, 4½ inches long, with Fixed Needle Point, Pen and Pencil Points, and Lengthening Bar, ... $7.25

No. 497. Plain Dividers, 3½ inches long, ... $1.75

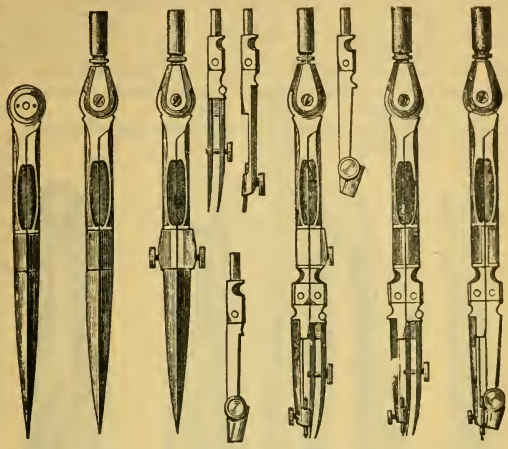
No. 498. Plain Dividers, 3½ inches long, with Handle, ... $2.25

No. 499. Dividers, 3½ inches long, with Pen, Pencil and Needle Points, . $6.00

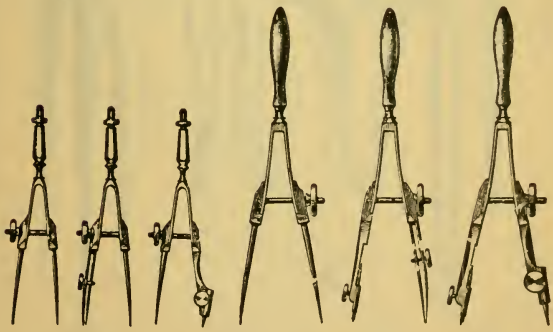
No. 500. Dividers, 3½ inches long, with Fixed Needle Point, Pen and Pencil Points, ... $5.25

No. 501. Bow Pen, 3½ inches long, with Fixed Needle and Pen Points, . $3.50

No. 502. Bow Pencil, 3½ inches long, with Fixed Needle and Pencil Points, ... $3.50



497. 498. 499. 500. 501. 502.



503. 504. 507 508.

No. 503.	Minute Bow Dividers, 2½ inches long, 3 in Set, ...	$8.25
No. 504.	Steel Spring Bow Dividers, 3 inches long, with Ivory Handle, .	$2.20
No. 505.	Steel Spring Bow Pen, 3 inches long, with Ivory Handle, . .	$2.50
No. 506.	Steel Spring Bow Pencil, 3 inches long, with Ivory Handle, .	$2.50

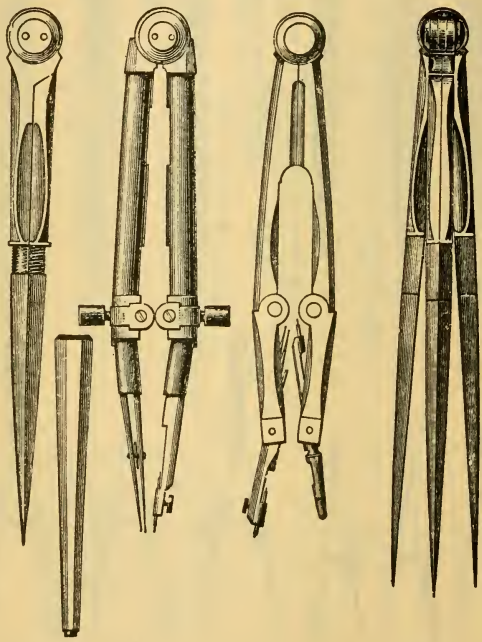
No. 507. Steel Spring Bow Pen, 3 inches long, with Needle Point and Ivory Handle, ... $2.85

No. 508. Steel Spring Bow Pencil, 3 inches long, with Needle Point and Ivory Handle, ... $2.85

No. 509. Steel Spring Bow Dividers, 3½ inches long, with Ivory Handle, $2.60

No. 510. Steel Spring Bow Pen, 3½ inches long, with Needle Point and Ivory Handle, ... $3.00

No. 511. Steel Spring Bow Pencil, 3½ inches long, with Needle Point and Ivory Handle, ... $3.00



512. 513. 514. 515.

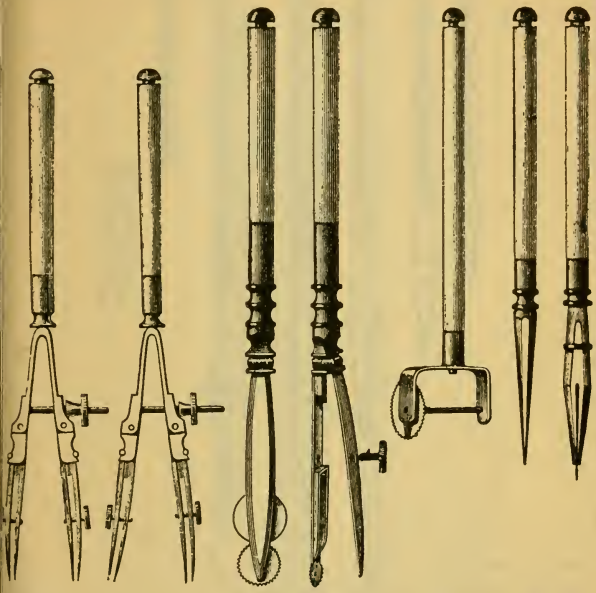
No. 512. Pocket Dividers, 5 inches long, with Sheath, ... $3.00

No. 513. Pillar Compasses, with Handles, Pen and Pencil Points to draw out, forming small Bows if required, ... $9.50

No. 514. Pocket Dividers, with Folding Points for Pocket. $3.75

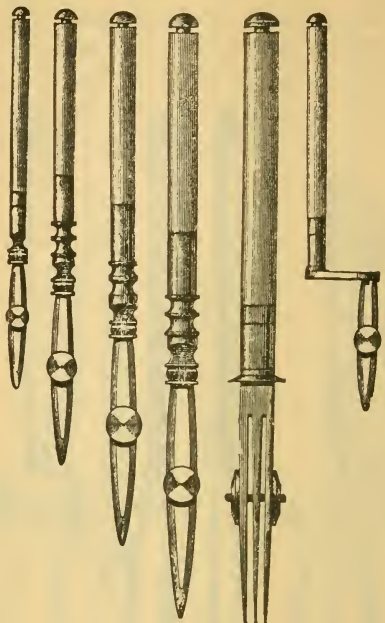
No. 515. Triangular Dividers, for taking off three points, ... $5.00

No. 516. Tubular Beam Compasses, 18 inches long, 2 Bars, . . . $11.00
No. 517. Tubular Beam Compasses, 24 inches long, 3 Bars, . . $13.00
No. 518. Tubular Beam Compasses, 36 inches long, 3 Bars, . . . $17.50



519. 520. 521. 522. 523. 524. 525.

No. 519. Railroad Pen, 5½ inches long, with Ivory Handle, ... $3.50
No. 520. Railroad Pen, 5½ inches long, K. & E's Improved, ... $3.75
No. 521. Dotting Pen, 6 inches long, with 6 Wheels, ... $3.75
No. 522. Dotting Pen, 6 inches long, with 6 Wheels, Improved, ... $4.25
No. 523. Opisometer, for measuring curved lines, ... $1.80
No. 524. Tracer, ... $1.35
No. 525. Pricker, ... $1.75
No. 526. Needle Points, Shouldered, from . . . . . .10 to .25
No. 527. Drawing Pen, 4 inches long, with Ebony Handle, ... $1.00
No. 528. Drawing Pen, 5½ inches long, with Ebony Handle, ... $1.10



529. 530. 531. 532. 533. 534.

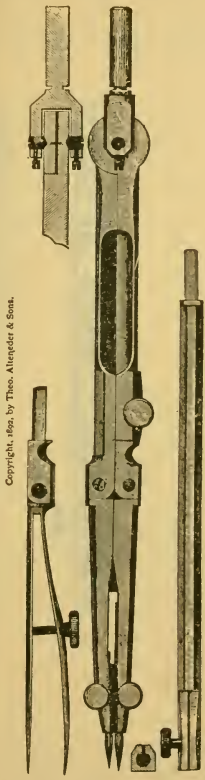
No. 529.	Drawing Pen, 4 inches long, with Joint and Ivory Handle, . .	$1.40
No. 530.	Drawing Pen, 4¾ inches long, with Joint, Pin and Ivory Handle,	$1.60
No. 531.	Drawing Pen, 5½ inches long, with Joint, Pin and Ivory Handle,	$1.80
No. 532.	Drawing Pen, 6½ inches long, with Joint, Pin and Ivory Handle,	$2.00
No. 533.	Border Pen, 6½ inches long, for broad lines.	$3.00
No. 534.	Curve Pen, 4½ inches long, ...	$1.50

NOTE.—We have recently added to our line of fine Instruments, from No. 489 to No. 534 of this Catalogue, a superior kind, of Swiss manufacture, that our customers may have a greater variety from which to make their selections. These Instruments are recommended as being, in every respect, first class. The excellence of Kern's celebrated Instruments (manufactured at Aarau, Switzerland), in which we always have dealt largely, is too well known to the profession to require praise from us. Alteneder's Instruments take rank with the above Swiss Instruments; but being somewhat lighter in construction, are preferred by many for this quality.

Alteneder's Patent Joint Instruments.

Are too well known to need any introduction to the trade. They are acknowledged by all practical men as being the best in the market. The prices as listed below are all *net*.

Each instrument is stamped T. ALTENEDER, Pat. 1871.



0	Dividers, 5½-inch, fixed Needle Point, with Pen and Pencil . .	each,	$7 00
1	Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar	"	7 50
2	Dividers, 5½-inch, fixed Needle Point and Pen	"	5 00
3	Dividers, 5½-inch, fixed Needle Point and Pencil	"	5 00

Alteneder's Patent Joint Instruments.

Each instrument is stamped T ALTENEDER, Pat. 1871

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4½

5

6

4 Dividers, 3½-inch, fixed Needle Point, with Pen and Pencil . . each, $6 00
4½ Dividers, 3½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar . . . . . " 6 75
5 Dividers, 3½-inch, fixed Needle Point and Pen . . . . . " 4 00
6 Dividers, 3½-inch, fixed Needle Point and Pencil . . . . . " 4 00

Alteneder's Patent Joint Instruments.

Each instrument is stamped T. ALTENEDER, Pat. 1871.

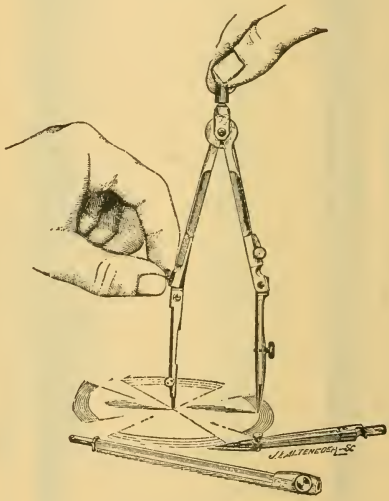
8

10

7	Plain Dividers, 3½ inches long	each,	$2 25
8	Plain Dividers, 5 inches long	"	2 50
9	Hair-spring Dividers, 3½ inches long	"	3 50
10	Hair-spring Dividers, 5 inches long	"	3 75

Alteneder's Patent Joint Dividers.

With Hair-Spring Attachment on Needle-Point Leg



Copyright, 1899, by Theo. Alteneder & Sons.

These instruments are the same in size, and possess all the features of the dividers already described, with the addition of a screw-adjustment of the needle-point leg, a refinement which aids materially in accurate work, is useful in ordinary work and which does not detract in the least from the stiffness and reliability of the tool.

Alteneder's Patent Joint Instruments.

With Hair-Spring Attachment on Needle-Point Leg.

Each instrument is stamped T ALTENEDER, Pat 1871

4 A.

1 A.	Dividers, 5½-inch, same as No. 1, but with Hair-Spring Attachment on Needle-Point Leg	$9 00
2 A.	Dividers, same as No. 2, but with Hair-Spring Attachment . . .	6 50
3 A.	Dividers, same as No. 3, but with Hair-Spring Attachment . . .	6 50
4 A.	Dividers, same as No. 4, but with Hair-Spring Attachment . . .	7 50
4½ A.	Dividers, same as No. 4½, but with Hair-Spring Attachment . .	8 25
5 A.	Dividers, same as No. 5, but with Hair-Spring Attachment . . .	5 50
6 A.	Dividers, same as No. 6, but with Hair-Spring Attachment . . .	5 50

Alteneder's Improved Plain and Hair-Spring Dividers.

Each instrument is stamped T. ALTENEDER, Pat. 1871.

These instruments differ from the ordinary Plain and Hair-Spring Dividers in that the steel points are provided with knuckle-joints instead of being fixed. This permits both points to be set perpendicular to the paper, which is an advantage in stepping or spacing distances of 3 inches and over. In spacing teeth around a pitch circle, or in dividing a given length into a number of equal parts, the convenience and accuracy of the hair-spring adjustment and the great advantage of having both points perpendicular make the Improved Hair-Spring Dividers especially desirable.

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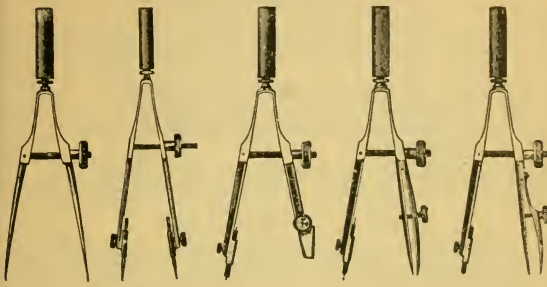
8 A

10 A.

7 A.	Plain Dividers, 3½-inch, with Joints in Legs	$3 25
8 A.	Plain Dividers, 5-inch, with Joints in Legs	3 50
9 A.	Hair-Spring Dividers, 3½-inch, with Joints in Legs	4 50
10 A.	Hair-Spring Dividers, 5-inch, with Joints in Legs	5 00

Alteneder's Spring Bow Instruments.

Each instrument is stamped with Trade-Mark "T. A."



11 11½ 12 13 13½

Copyright, 1892, by Theo. Alteneder & Sons.

Regular Size.

11	Spacing Dividers, 3 inches long, Metal Handle	each,	$1 75
11½	Spacing Dividers, 3 inches long, Metal Handle, with Needle Points	"	2 50
12	Bow Pencil, Needle Point, 3 inches long, Metal Handle . . .	"	2 50
13	Bow Pen, Needle Point, 3 inches long. Metal Handle	"	2 50
13½	Bow Pen, Needle Point, 3 inches long, Metal Handle, with Spring on Pen	"	2 65
	Imitation Morocco Covered Case, for any three of above instruments .		80
	Real Morocco Leather Covered Case, for any three of above instruments .		1 00

Size "A."—2 Inches Long.

11 A.	Spacing Dividers, 2 inches long, Metal Handle	each,	$1 75
11½ A.	Spacing Dividers, 2 inches long, Metal Handle, with Needle Points	"	2 50
12 A.	Bow Pencil, Needle Point, 2 inches long, Metal Handle . .		2 50
13 A.	Bow Pen, Needle Point, 2 inches long, Metal Handle . . .		2 50
13½ A.	Bow Pen, Needle Point, 2 inches long, Metal Handle, with Spring on Pen		2 65
	Imitation Morocco Covered Case, for any three of above instruments . .		80
	Real Morocco Leather Covered Case, for any three of above instruments .		1 00

Alteneder's Spring Bow Instruments.

Each instrument is stamped with Trade-Mark "T. A."

Size "B."—4 Inches Long.

11 B.	Spacing Dividers, 4 inches long, Metal Handle	each,	$2 50
11½ B.	Spacing Dividers, 4 inches long, Metal Handle, with Needle Points	"	3 25
12 B.	Bow Pencil, Needle Point, 4 inches long, Metal Handle	"	3 25
13 B.	Bow Pen, Needle Point, 4 inches long, Metal Handle	"	3 25
13½ B.	Bow Pen, Needle Point, 4 inches long, Metal Handle, with Spring on Pen	"	3 40
	Imitation Morocco Covered Case, for any three of above instruments		95
	Real Morocco Leather Covered Case, for any three of above instruments		1 25

Size "C."—5 Inches Long.

11 C.	Spacing Dividers, 5 inches long, Metal Handle	each,	$3 25
11½ C.	Spacing Dividers, 5 inches long, Metal Handle, with Needle Points	"	4 00
12 C.	Bow Pencil, Needle Point, 5 inches long, Metal Handle	"	4 00
13 C.	Bow Pen, Needle Point, 5 inches long, Metal Handle	"	4 00
13½ C.	Bow Pen, Needle Point, 5 inches long, Metal Handle, with Spring on Pen	"	4 15
	Imitation Morocco Covered Case, for any three of above instruments		95
	Real Morocco Leather Covered Case, for any three of above instruments		1 25

Alteneder's Minute Bow Instruments.

Each instrument is stamped with Trade-Mark "T. A."

11 M.

12 M.

13 M.

Copyright, 1890, by Theo. Alteneder & Sons.

11 M.	Minute Bow Spacer, 1½ inches long	$1 75
12 M.	Minute Bow Pencil, 1½ inches long	2 50
13 M.	Minute Bow Pen, 1½ inches long, with Spring on Pen	2 50
	Imitation Morocco Covered Case, for three Minute Bow instruments	80
	Real Morocco Leather Covered Case, for three Minute Bow instruments	1 00

Álteneder's Minute Bow Instruments.

With Needle Point.

Each instrument is stamped with Trade-Mark "T. A."

12½ M.

13½ M.

12½ M. Minute Bow Pencil, 1½ inches long, with Needle Point $2 75

13½ M. Minute Bow Pen, 1½ inches long, with Needle Point and Spring on Pen 2 75

Self-Adjusting Needle-Point Bow Instruments.

Each instrument is stamped with Trade-Mark "T. A."

13 N.

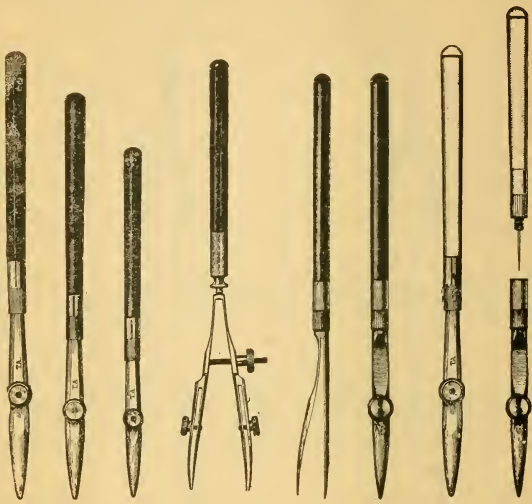
13½ N.

13 N. Self-Adjusting Needle-Point Bow Pen, Spring on Pen $4 00

13½ N. Self-Adjusting Needle-Point Bow Pen and Pencil, Spring on Pen . 5 00

Alteneder's Ruling Pens.

Each instrument is stamped with Trade-Mark "T. A."



14 15 16 17 15½

14	Ruling Pen, 5½ inch, Ebony Handle	$1 75
15	Ruling Pen, 5 inch, Ebony Handle	1 50
16	Ruling Pen, 4¼ inch, Ebony Handle	1 25
17	Railroad Pen, 5 inch, Ebony Handle	3 50

Alteneder's Improved Ruling Pens.

Each pen is stamped with Trade-Mark "T. A."

14½	Improved Ruling Pen, 5½ inch, Spring on Upper Blade, Ebony Handle	$1 90
15½	Improved Ruling Pen, 5 inch, Spring on Upper Blade, Ebony Handle	1 65
16½	Improved Ruling Pen, 4¼ inch, Spring on Upper Blade, Ebony Handle	1 40
	Nickle-Plated Pens for Use with Red Ink, extra	10
	* Handles of Fine White Ivory in place of Ebony, extra	20
	† Pricker-Point in Handle of any above Ruling Pens, extra	15

The Alteneder Patent Spring-Hinge Pen.

Illustration 5-6 actual size.

[Fig. 1.] [Fig. 2.]

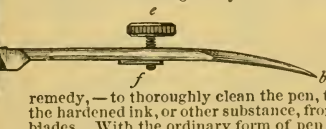
The advantages which we claim for it are: **It may be thoroughly cleaned in less time and with greater convenience than any other form of pen, and this cleaning is accomplished without disturbing the adjustment for thickness of line to be drawn.**

Fig. 1 is a side view, with blades adjusted to rule a fine line. Fig. 2 shows blades separated for cleaning.

In Fig. 2, *a* represents the fixed blade of the pen, and *b* a blade pivoted to the fixed blade, and acted upon by a spring, *c*, secured to the fixed blade and adapted to a longitudinal slot therein. This spring acts upon the pivoted blade at a point beyond the fulcrum of the same, so that its tendency is to cause the point of the pivoted blade to approach, and, if not restricted, to come in contact with the point of blade *a*. To a threaded opening, in the blade *b*, is adapted a set-screw, *e*, the point of which bears upon the inner side of blade *a*, and serves to limit the approach of the two blades, thus regulating the distance apart of their points to accord with the desired width of line to be drawn.

When it is desired to clean the pen, it is only necessary to raise the blade, *b* as shown in Fig. 2, whereupon the inner faces of the blades are exposed for cleaning purposes, the spring tending to hold the blade *b* in the elevated position; and when the blades have been properly cleaned, the blade *b* is restored to its proper position, acting much like the spring of a pen-knife when closing.

It happens quite frequently that while inking a drawing the inner faces of the blades become incrusted with hard, dry ink, or a particle of dust, or other matter, interposes itself between the two blades, preventing the ink from flowing freely. In such cases the pen will either produce no line, or else a "ragged" one. There is but one remedy, — to thoroughly clean the pen, thus removing the hardened ink, or other substance, from between the blades. With the ordinary form of pen this can only be accomplished by removing the screw, — thereby destroying the adjustment for thickness of line to be drawn, — replacing the screw after cleaning, and, after refilling the pen, resetting the adjusting screw to secure the same width of line as before.



With the Alteneder Patent Spring-Hinge Pen the blade *b* need but be raised, — as shown in Fig. 2, — the pen thoroughly cleaned, the blade restored to its proper position, and, after refilling the pen, the draughtsman may go on with his work, knowing that the adjustment for width of line has not been disturbed, the adjustment of the blades, dependent upon the set-screw, *e*, being precisely the same as before.

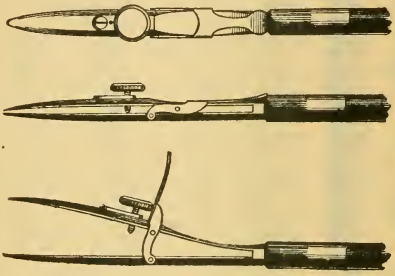
On the face of the blade *b* is a friction device, *f*, acting upon the set-screw, *e*, and tending to prevent its changing by accident. The hinge joint is adjustable, to take up the slight wear that might occur at that point.

PRICE — Alteneder Patent Spring-Hinge Pen, 5½ in. long, ebony or aluminum handle, net, $2.90

Alteneder's Lever Ruling Pen.

Patented May 7, '95 : Sept. 29, '96.

Cleaned without altering adjustment.



To clean, do not touch the screw; lift the lever.

Opened and closed instantly, and without removing the screw or disturbing its adjustment for width of line.

The Lever Pen is made in one piece, with the upper blade in the form of a spring, the action of which is such as to constantly press the points together. The adjusting-screw is fitted to the upper instead of the lower blade (as is usual), and merely bears against the inner surface of the latter; thus separating the points to obtain the desired width of line.

A lever, having parallel arms, is pivoted to the lower blade, and is provided with a bar connecting the two arms and located between the blades. When the lever is lifted, the bar raises the upper blade and holds the points apart for cleaning.

No. 1605.	4½ inch Lever Pen, ebony handle	$2.50
1607.	5 inch Lever Pen, ebony handle	2.50
1609.	5½ inch Lever Pen, ebony handle	2.50

Furnished with aluminum handles if preferred.

Ivory handles, 20 cents extra.

Pricker-point in handle, 15 cents extra.

Alteneder's Curve Pens and Prickers.

Each instrument is stamped with Trade-Mark "T. A.

Copyright, 1890, by Theo. Alteneder & Sons.

104

105

108

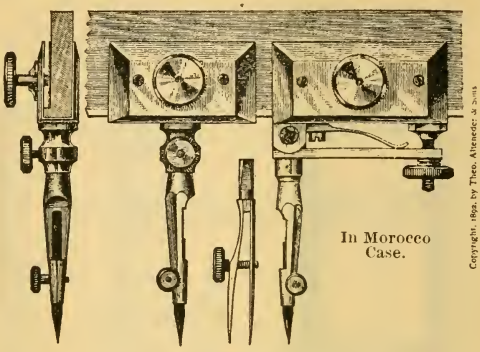
110

104	Swivel Curve Pen, Spring on Upper Blade of Pen, Hollow Metal Handle	$2 00
105	Curve Pen, Spring on Upper Blade of Pen, Ebony Handle	1 40
106	Curve Pen, Spring on Upper Blade of Pen, Ivory Handle	1 60
107	Pricker, Fixed Needle Point, Screw Cap, Ebony Handle	70
108	Pricker, Fixed Needle Point, Screw Cap, Ivory Handle	90
109	Pricker, Removable Needle Point, Ebony Handle	1 00
110	Pricker, Removable Needle Point, Ivory Handle	1 20

Alteneder's Beam Compasses.

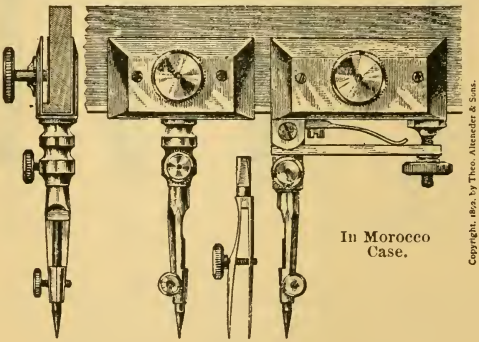
With Improved Micrometer Adjustment.

Each instrument is stamped T. ALTENEDER. Phila.



119

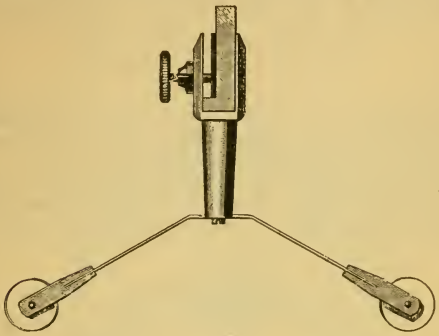
118 Beam Compass, fixed Needle Point, Pen and Pencil . . . small size, $8.00
119 Beam Compass, fixed Needle Point, Pen and Pencil . . . large size, 9.00



123

122 Beam Compass, interchangeable Needle-Point Leg, Pen and Pencil . . . . . small size, $8.75
123 Beam Compass, interchangeable Needle-Point Leg, Pen and Pencil . . . . . large size, 9.75

Extras for Alteneder's Beam Compasses.



126

126 Wheel Attachment for Beam Compass $2 50

NOTE.—In ordering the Wheel Attachment, it is necessary to state if wanted for large or small size.

127 Hardwood Bars with flange for Beam Compasses, for large or small size.

12	18	24	30	36	42	48-inch.
$0 20	0 25	0 35	0 40	0 45	0 55	0 65

Prices for Graduating Beam Compasses.

129 Beam Compass graduated like Fig. "A," on page 23, with Index, extra $0 50

130 Beam Compass graduated like Fig. "B," on page 23, with Index, extra 0 75

Graduated Bars for Beam Compasses.

	12	18	24	30	36	42	48-inch.	
132	$0 65	1 00	1 25	1 60	1 85	2 25	2 50	Graduated like Fig. "A," Page 23, either 16ths or 20ths.
134	0 50	0 75	1 00	1 25	1 50	1 75	2 00	Graduated like Fig. "B," Page 23, in half inches.

Cases for Beam Compasses.

Imitation Morocco Covered Case, for 118, 119, 122 or 123 . . . . . $0 80

Real Morocco Leather Covered Case, for 118, 119, 122 or 123 . . . . . 1 00

Imitation Morocco Covered Case, for Beam Compass and Wheel Attachment 1 50

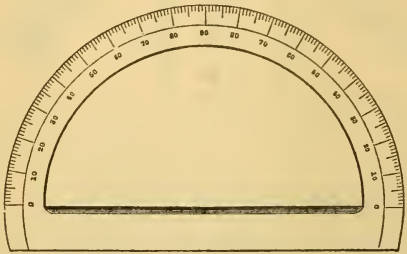
Real Morocco Leather Covered Case, for Beam Compass and Wheel Attachment 1 75

Alteneder's German Silver Protractors.

Each instrument is stamped T. ALTENEDER, Phila.

The requirements of a Protractor are that it shall be light and handy, and, at the same time, so stiff and strong that it will retain its shape; and, above all, that its graduations shall be *fine, distinct and accurate.*

Our Protractors are made of *Hard Rolled German Silver*, which is greatly superior to ordinary castings in strength, hardness and elasticity. They are graduated on our own engine. We guarantee them to be superior to any others.



Half Circle, Plain.

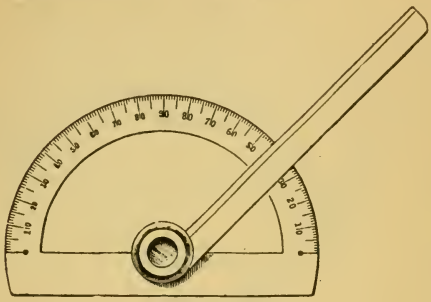
150 German Silver Protractor, ½ Circle ½ Degrees inside Centre, 5 inches, $3 00
151 German Silver Protractor, ½ Circle ½ Degrees inside Centre, 6 inches, 4 00
152 German Silver Protractor, ½ Circle ½ Degrees inside Centre, 7 inches, 5 00
153 German Silver Protractor, ½ Circle ¼ Degrees inside Centre, 8 inches, 6 00
154 German Silver Protractor, ½ Circle ¼ Degrees inside Centre, 10 inches, 7 50

Whole Circle, Plain.

157 German Silver Protractor, Whole Circle, ½ Degrees, 6 inches . . $7 50
158 German Silver Protractor, Whole Circle, ¼ Degrees, 8 inches . . 10 00
159 German Silver Protractor, Whole Circle, ¼ Degrees, 10 inches . . 13 00

Alteneder's German Silver Protractors.

Each instrument is stamped T. ALTENEDER, Phila.



Half Circle, with Arm and Horn Centre.

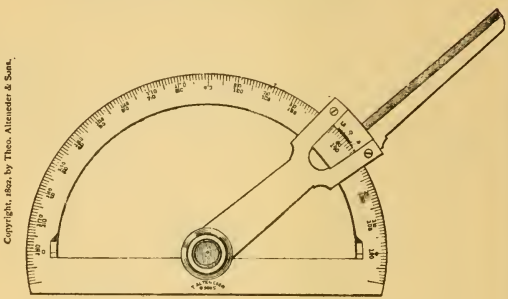
162 German Silver Protractor, ½ Circle ½ Degrees, with Arm and Horn Centre, 5 inches diameter $6 50
163 German Silver Protractor, ½ Circle ½ Degrees, with Arm and Horn Centre, 6 inches diameter 7 50
164 German Silver Protractor, ½ Circle ½ Degrees, with Arm and Horn Centre, 7 inches diameter 9 00
165 German Silver Protractor, ½ Circle ¼ Degrees, with Arm and Horn Centre, 8 inches diameter 11 00

Whole Circle, with Arm and Horn Centre.

168 German Silver Protractor, Whole Circle ½ Degrees, Arm and Horn Centre, 5 inches diameter $10 00
169 German Silver Protractor, Whole Circle ½ Degrees, Arm and Horn Centre, 6 inches diameter 12 00
170 German Silver Protractor, Whole Circle ¼ Degrees, Arm and Horn Centre, 7 inches diameter 14 00
171 German Silver Protractor, Whole Circle ¼ Degrees, Arm and Horn Centre, 8 inches diameter 16 00

Alteneder's German Silver Protractors.

Each instrument is stamped T. ALTENEDER, Phila.



Half Circle, with Arm and Vernier.

174 German Silver Protractor, ½ Circle ½ Degrees, with Arm and Vernier, reading to 3 minutes, 5 inches diameter $9 00

175 German Silver Protractor, ½ Circle ½ Degrees, with Arm and Vernier, reading to 3 minutes, 6 inches diameter 11 00

176 German Silver Protractor, ½ Circle ¼ Degrees, with Arm and Vernier, reading to 1 minute, 7 inches diameter 12 00

177 German Silver Protractor, ½ Circle ¼ Degrees, with Arm and Vernier, reading to 1 minute, 8 inches diameter 14 00

178 German Silver Protractor, ½ Circle ¼ Degrees, with Arm and Vernier, reading to 1 minute, 10 inches diameter 17 00

Whole Circle, Arm and Vernier.

180 German Silver Protractor, Whole Circle ½ Degrees, with Arm and Vernier, reading to 3 minutes, 5 inches diameter $14 00

181 German Silver Protractor, Whole Circle ½ Degrees, with Arm and Vernier, reading to 3 minutes, 6 inches diameter 15 00

182 German Silver Protractor, Whole Circle ¼ Degrees, with Arm and Vernier, reading to 1 minute, 8 inches diameter 16 00

183 German Silver Protractor, Whole Circle ¼ Degrees, with Arm and Vernier, reading to 1 minute, 10 inches diameter 19 00

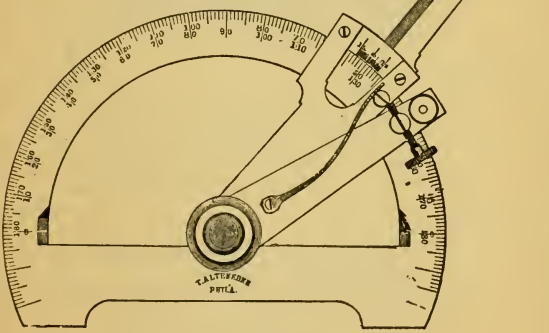
Alteneder's Improved Protractor.

With Arm, Vernier and Micrometer Adjustment.

Each instrument is stamped T. ALTENEDER, Phila.

This is the most convenient, accurate and reliable instrument of the kind that is made. It has a clamping-arm held rigidly at any part of the circle by means of a shoe and thumb-nut. A spring on this clamping-arm holds the vernier-arm against the end of an adjusting-screw, working in a split-nut also on the clamping-arm. The nut has a clamping-screw to take up any wear and lost motion.

By this arrangement, the arm can be swung freely when the thumb-nut is released and held firmly when it is tightened, while the most delicate adjustment of the vernier-arm can be made with a certainty of its retaining its position.



Copyright, 1890, by Frost, Alteneder & Adams.

Half Circle.

185 Improved Protractor, ½ Circle ¼ Degrees, reading to 1 minute, 7-inch $20 00
186 Improved Protractor, ½ Circle ¼ Degrees, reading to 1 minute, 8-inch 22 00
187 Improved Protractor, ½ Circle ¼ Degrees, reading to 1 minute, 10-inch 25 00

Whole Circle.

190 Improved Protractor, Whole Circle ¼ Degrees, reading to 1 minute, 7-inch $23 00
191 Improved Protractor, Whole Circle ¼ Degrees, reading to 1 minute, 8-inch 25 00
192 Improved Protractor, Whole Circle ¼ Degrees, reading to 1 minute, 10-inch 28 00

Instruments in Morocco Cases.

Each instrument is stamped "T. ALTENEDER, Phila.," or with Trade-Mark "T. A."

230

230 Morocco Case, containing:

No. 5 Dividers, 3½-inch, fixed Needle Point and Pen.
No. 6 Dividers, 3½-inch, fixed Needle Point and Pencil.
No. 16½ Improved Ruling Pen, 4¼-inch, Ebony Handle. } $10 75

231 Morocco Case, containing:

No. 5 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pen.
No. 6 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pencil.
No. 16½ Improved Ruling Pen, 4¼-inch, Ebony Handle. } $13 75

232 Morocco Case, containing:

No. 5 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pen.
No. 6 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pencil.
No. 9 A. Improved Hair-Spring Dividers, 3½-inch.
No. 16½ Improved Ruling Pen, 4¼-inch, Ebony Handle. } $18 50

233 Morocco Case, containing:

No. 4½ Dividers, 3½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 16½ Improved Ruling Pen, 4¼-inch, Ebony Handle. } $9 50

234 Morocco Case, containing:

No. 4½ A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 16½ Improved Ruling Pen, 4¼-inch, Ebony Handle. } $11 00

Instruments in Morocco Cases.

Each instrument is stamped "T. ALTENEDER, Phila.," or with Trade-Mark "T. A."

238

238 Morocco Case, containing:

No. 4 Dividers, 3½-inch, fixed Needle Point, with Pen and Pencil.
No. 9 Hair-Spring Dividers, 3½ inches long.
No. 16½ Improved Ruling Pen, 4½-inch, Spring on Upper Blade, Ebony Handle.
} $12 25

239 Morocco Case, containing:

No. 4 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen and Pencil.
No. 9 A. Improved Hair-Spring Dividers, 3-inch.
No. 16½ Improved Ruling Pen, 4½-inch, Spring on Upper Blade, Ebony Handle.
} $14 75

240 Morocco Case, containing:

No. 4½ Dividers, 3½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 9 Hair-Spring Dividers, 3½ inches long.
Nos. 11 A., 12 A., 13 A. Spring Bow Instruments, 2-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 5 and 4¼ inch.
} $22 25

241 Morocco Case, containing:

No. 4½ A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 9 A. Improved Hair-Spring Dividers, 3-inch.
Nos. 11 A., 12 A., 13 A. Spring Bow Instruments, 2-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 5 and 4¼ inch.
} $24 75

Instruments in Morocco Cases.

Each instrument is stamped "T. ALTENDER, Phila.," or with Trade-Mark "T. A."

245

245 Morocco Case, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
* No. 12 Spring Bow Pencil, 3-inch.
No. 13 Spring Bow Pen, 3-inch.
No. 15½ Improved Ruling Pen, 5-inch, Spring on Upper Blade, Ebony Handle. — $15 75

* The No. 12 is furnished with two steel points, so that it may be used as a spacer.

246 Morocco Case, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
Nos. 11, 12, 13 Spring Bow Instruments, 3-inch.
No. 15½ Improved Ruling Pen, 5-inch, Spring on Upper Blade, Ebony Handle. — $17 75

248 Morocco Case, containing:

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
Nos. 11, 12, 13 Spring Bow Instruments, 3-inch.
No. 15½ Improved Ruling Pen, 5-inch, Spring on Upper Blade, Ebony Handle. — $19 25

249 Morocco Case, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 4 Dividers, 3½-inch, fixed Needle Point, with Pen and Pencil.
Nos. 11, 12, 13 Spring Bow Instruments, 3-inch.
Nos. 15½, 16½ Improved Ruling Pens, 4¼ and 5 inch. — $25 25

Instruments in Morocco Cases.

Each instrument is stamped "T. ALTENEDER, Phila.," or with Trade-Mark "T A

254

254 Morocco Case, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar. No. 10 Hair-Spring Dividers, 5-inch. Nos. 11, 12, 13 Spring Bow Instruments, 3-inch. Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.	$23 50

255 Morocco Case, containing

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar. No. 10 A. Improved Hair-Spring Dividers, 5-inch. Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch. Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.	$26 00

258 Morocco Case, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar. No. 5 Dividers, 3½-inch, fixed Needle Point and Pen. No. 6 Dividers, 3½-inch, fixed Needle Point and Pencil. No. 10 Hair-Spring Dividers, 5-inch. Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch. Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.	$31 75

Instruments in Morocco Cases.

Each instrument is stamped "T. ALTENEDER, Phila.," or with Trade-Mark "T. A."

259 Morocco Case, containing:

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 5 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pen.
No. 6 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pencil.
No. 10 A. Improved Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.
} $37 25

262 Morocco Case, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 10 Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.
No. 118 Beam Compass, with Micrometer Adjustment, small size.
} $31 00

263 Morocco Case, containing:

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 10 A. Improved Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.
No. 118 Beam Compass, with Micrometer Adjustment, small size.
} $32 50

266 Morocco Case, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 10 Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.
No. 136 Proportional Dividers, 6½-inch, divided for Lines and Circles.
} $33 00

Instruments in Morocco Cases.

Each instrument is stamped "T. ALTENEDER, Phila.," or with Trade-Mark "T. A.

267 Morocco Case, containing:

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 10 A. Improved Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.
No. 136 Proportional Dividers, 8 -inch, divided for Lines and Circles. with Rack.
} $37 50

269 Morocco Case, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 5 Dividers, 3½-inch, fixed Needle Point and Pen.
No. 6 Dividers, 3½-inch, fixed Needle Point and Pencil.
No. 10 Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.
No. 118 Beam Compass, with Micrometer Adjustment, small size.
No. 137 Proportional Dividers, 8-inch, with Rack Movement, divided for Lines and Circles.
} $51 25

270 Morocco Case, containing:

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 5 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pen.
No. 6 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pencil.
No. 10 A. Improved Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.
No. 118 Beam Compass, with Micrometer Adjustment, small size.
No. 137 Proportional Dividers, 8-inch, with Rack Movement, divided for Lines and Circles.
} $56 75

Instruments in Mahogany Cases.

Each instrument is stamped "T. ALTENEDER, Phila.," or with Trade-Mark "T. A."

353 Mahogany Case, Tray, Lock and Key, size of Tray 5 x 8¾, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 8 Plain Dividers, 5-inch.
Nos. 11, 12, 13 Spring Bow Instruments, 3 inch.
No. 15½ Improved Ruling Pen, 4¼-inch.
} $24 50

354 Mahogany Case, Tray, Lock and Key, size of Tray 5 x 8¾, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 10 Hair-Spring Dividers, 5-inch.
Nos. 11, 12, 13 Spring Bow Instruments, 3-inch.
Nos. 15½, 16½ Improved Ruling Pens, 4¾ and 5 inch.
} $27 50

355 Mahogany Case, Tray, Lock and Key, size of Tray 5 x 8¾, containing:

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 10 A. Improved Hair-Spring Dividers, 5-inch
Nos. 11, 12, 13 Spring Bow Instruments, 3-inch.
Nos. 15½, 16½ Improved Ruling Pens, 4¾ and 5 inch.
} $29 00

Instruments in Mahogany Cases.

Each instrument is stamped "T. ALTENEDER, Phila.," or with Trade-Mark "T. A."

356 Mahogany Case, Tray, Lock and Key, size of Tray 6 x 9½, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 10 Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.
No. 118 Beam Compass, with Micrometer Adjustment, small size.
} $34 75

357 Mahogany Case, Tray, Lock and Key, size of Tray 6 x 9½, containing:

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 10 A Improved Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.
} $37 75

359 Mahogany Case, Tray, Lock and Key, size of Tray 6 x 9½, containing:

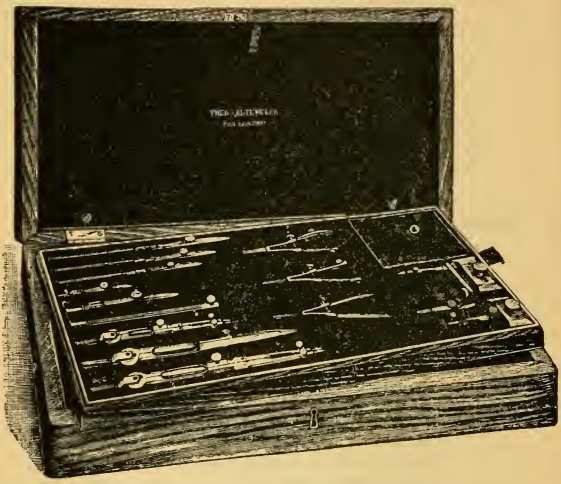
No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 10 Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.
No. 137 Proportional Dividers, 8-inch, with Rack Movement, divided for Lines and Circles.
} $42 75

360 Mahogany Case, Tray, Lock and Key, size of Tray 6 x 9½, containing:

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 10 A. Improved Hair-Spring Dividers, 5-inch J. Legs
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 15½ and 16½ Improved Ruling Pens, 4¼ and 5 inch.
No. 118 Beam Compass, with Micrometer Adjustment, small size.
No. 137 Proportional Dividers, 8-inch, with Rack Movement, divided for Lines and Circles.
} $49 00

Instruments in Mahogany Cases.

Each instrument is stamped "T. ALTENEDER, Phila.," or with Trade Mark "T. A.



362 Mahogany Case, Tray, Lock and Key, size of Tray 6¼ x 13¼, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 4 Dividers, 3½-inch, fixed Needle Point, with Pen and Pencil.
No. 10 Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 14½, 15½ and 16½ Improved Ruling Pens, 5½, 5 and 4¼ inch.
No. 119 Beam Compass, with Micrometer Adjustment large size.
} $46 00

363 Mahogany Case, Tray, Lock and Key, size of Tray 6¼ x 13¼, containing:

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 4 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen and Pencil.
No. 10 A. Improved Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 14½, 15½ and 16½ Improved Ruling Pens, 5½, 5 and 4¼ inch.
No. 119 Beam Compass, with Micrometer Adjustment, large size.
} $50 00

Instruments in Mahogany Cases.

Each instrument is stamped "T. ALTENEDER, Phila.," or with Trade-Mark "T. A."

367 Mahogany Case, Tray, Lock and Key, size of Tray 6¼ x 13¼, containing:

No. 1 Dividers, 5½-inch, fixed Needle Point, with Pen, Pencil and Lengthening Bar.
No. 5 Dividers, 3½-inch, fixed Needle Point and Pen.
No. 6 Dividers, 3½-inch, fixed Needle Point and Pencil.
No. 10 Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 14½, 15½ and 16½ Improved Ruling Pens, 5½, 5 and 4¼ inch.
No. 118 Beam Compass, with Micrometer Adjustment, small size.
No. 136 Proportional Dividers, 6½-inch, divided for Lines and Circles.
} $54 50

368 Mahogany Case, Tray, Lock and Key, size of Tray 6¼ x 13¼, containing:

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 5 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pen.
No. 6 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pencil.
No. 10 A. Improved Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13 Spring Bow Instruments, 3-inch.
Nos. 14½, 15½ and 16½ Improved Ruling Pens, 5½, 5 and 4¼ inch.
No. 118 Beam Compass, with Micrometer Adjustment, small size.
No. 136 Proportional Dividers, 6½-inch, divided for Lines and Circles.
} $63 00

369 Mahogany Case, Tray, Lock and Key, size of Tray 6¼ x 13¼, containing:

No. 1 A. Dividers, 5½-inch, fixed Needle Point, with Hair-Spring Attachment, Pen, Pencil and Lengthening Bar.
No. 5 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pen.
No. 6 A. Dividers, 3½-inch, fixed Needle Point, with Hair-Spring Attachment and Pencil.
No. 10 A. Improved Hair-Spring Dividers, 5-inch.
Nos. 11, 12 and 13½ Spring Bow Instruments, 3-inch.
Nos. 14½, 15½ and 16½ Improved Ruling Pens, 5½, 5 and 4¼ inch.
No. 15½ Nickel-Plated Red-Ink Pen, Ivory Handle.
No. 17 Railroad Pen.
No. 104 Swivel Curve Pen, Metal Handle.
No. 107 Pricker, fixed Needle Point, Metal Cap.
No. 119 Beam Compass, with Micrometer Adjustment, large size.
No. 137 Proportional Dividers, 8-inch, with Rack Movement, divided for Lines and Circles.
} $82 00

FROST & ADAMS CO'S CATALOGUE.

SECTION XII.

DRAUGHTSMEN'S SUNDRIES,

COMPRISING

PROTRACTORS, SCALES, STEEL RULES, STRAIGHT EDGES TRIANGLES, CURVES, T SQUARES, PARALLEL RULES, TAPE MEASURES, &c.

Protractors and Scales.

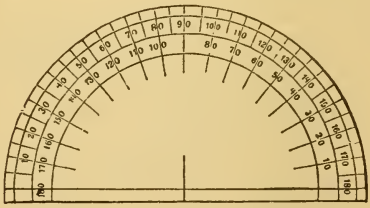
Paper Protractors.

No. 555. Circular Protractor, 13 inches diameter, ½ degrees, on Drawing Paper, ...30

No. 556. Same as No. 555, on Bristol Board, . . .40

No. 557. Same as No. 555, on Vegetable Tracing Paper, ...25

No. 558. Half Circle Protractor, 5 inches diameter, ½ degrees, on Bristol Board, ...25



561.

Horn Protractors.

No. 559. Railroad Curve Protractor, 8 inches diameter, having laid off on it twenty-three curves, from ½ degree to 8 degrees, with a radius of 400 feet to the inch, ... $1.60

No. 560. Protractor, 4 inches diameter, ½ circle, whole degrees, .15

No. 561. Protractor, 5 inches diameter, ½ circle, ½ degrees, ...25
No. 562. Protractor, 6 inches diameter, ½ circle, ½ degrees, ...30
No. 563. Protractor, 7 inches diameter, ½ circle, ½ degrees, ...50
No. 564. Protractor, 8 inches diameter, ½ circle, ½ degrees, ...80

Brass Protractors.

No. 565. Protractor, 4 inches diameter, ½ circle, whole degrees, . .10
No. 566. Protractor, 4 inches diameter, ½ circle, ½ degrees, ...35
No. 567. Protractor, 5 inches diameter, ½ circle, ½ degrees, ...55
No. 568. Protractor, 6 inches diameter, ¼ circle, ½ degrees, . . .65

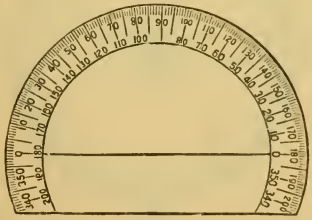
German Silver Protractors.

No. 569. Protractor, 4 inches diameter, ½ circle, whole degrees, . . .50
No. 570. Protractor, 5 inches diameter, ½ circle, ½ degrees, ...85
No. 571. Protractor, 6 inches diameter, ½ circle, ½ degrees, . . . $1.00
No. 572. Protractor, 7 inches diameter, ½ circle, ½ degrees, . . . $1.15
No. 573. Protractor, 5 inches diameter, ½ circle, Bevelled Edge, ½ degrees, ... $1.25
No. 574. Protractor, 6 inches diameter, ½ circle, Bevelled Edge, ½ degrees, ... $2.00
No. 575. Protractor, 7 inches diameter, ½ circle, Bevelled Edge, ½ degrees, ... $2.65

German Silver Swiss Protractors,

Of Superior Quality.

No. 576. Protractor, 4 inches diameter, ½ circle, whole degrees, . . $1.90
No. 577. Protractor, 5 inches diameter, ½ circle, ½ degrees, . . . $2.50
No. 578. Protractor, 6 inches diameter, ½ circle, ½ degrees, . . . $3.20
No. 579. Protractor, 6 inches diameter, ½ circle, ¼ degrees, . . . $3.80



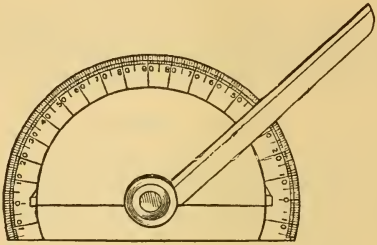
580.

No. 580. Protractor, 5 inches diameter, ½ circle, ½ degrees, . . . $3.00
No. 581. Protractor, 6 inches diameter, ½ circle, ½ degrees, . . . $3.50
No. 582. Protractor, 6 inches diameter, ½ circle, ¼ degrees, . . . $4.50

No. 583. Protractor, 5 inches diameter, ½ circle, ½ degrees, Horn Centre and Movable Arm. $6.50

No 584. Protractor, 6 inches diameter, ½ circle, ½ degrees, Horn Centre and Movable Arm, ... $7.50

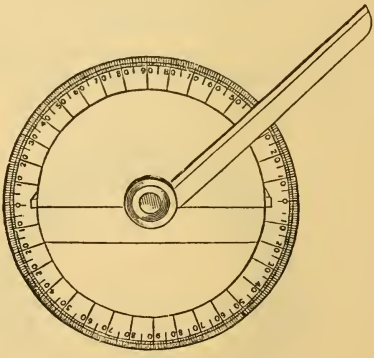
No. 585. Protractor, 7 inches diameter, ½ circle, ½ degrees, Horn Centre and Movable Arm. $9.00



583.

No. 586. Protractor, 8 inches diameter, ½ circle, ½ degrees, Horn Centre and Movable Arm, ... $12.00

No. 587. Protractor, 5 inches diameter, whole circle, ½ degrees, Horn Centre and Movable Arm. $10.00



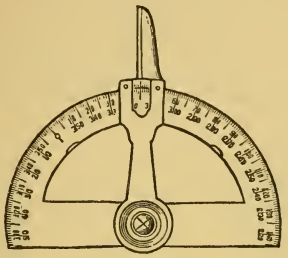
587.

No. 588. Protractor, 6 inches diameter, whole circle, ½ degrees, Horn Centre and Movable Arm, ... $12.00

No. 589. Protractor, 7 inches diameter, whole circle, ½ degrees, Horn Centre and Movable Arm, ... $14.00

No. 590. Protractor, 8 inches diameter, whole circle, ½ degrees, Horn Centre and Movable Arm, ... $16.00

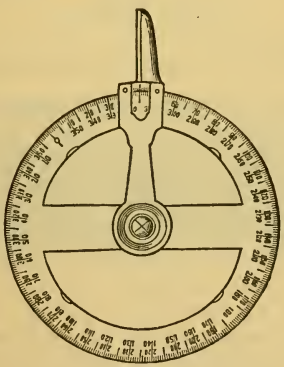
No. 591. Protractor, 5½ inches diameter, ½ circle, ½ degrees, and Vernier reading to three minutes, ... $11.00



591.

No. 592. Protractor, 8 inches diameter, ½ circle, ¼ degrees, and Vernier reading to one minute, ... $14.50

No. 593. Protractor, 10 inches diameter, ½ circle, ¼ degrees, and Vernier reading to one minute, ... $18.00



594.

No. 594. Protractor, 5½ inches diameter, whole circle, ½ degrees, and Vernier reading to three minutes, ... $14.00

No. 595. Protractor, 8 inches diameter, whole circle, ¼ degrees, and Vernier reading to one minute, ... $16.25

No. 596. Protractor, 10 inches diameter, whole circle, ¼ degrees, and Vernier reading to one minute, ... $20.00

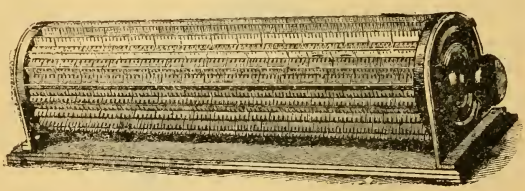
Reckoning Machines.

Calculations, such as Addition, Subtraction, Multiplication, Division, Squaring, Cubing, Extracting of Square Roots, etc., etc., can be performed with rapidity and unfailing accuracy and without mental effort by means of this machine. It is set for any required calculation by the shifters in the grooves and the calculation is performed by turning the hairdle. The lower row of figure holes records the number of turns of the handle and the upper row gives the result. The machine will multiplty two factors, each of which may have as many figures as there are groves in the plate.

No. 1739 A.	Reckoning Machine, 6 grooves, 12 Holes in upper row, ... each, Net,	$180.00
No 1739 B.	Reckoning Machine, 8 grooves, 16 Holes in upper row, ... each, Net,	225.00
No. 1739 C.	Reckoning Machine, 10 grooves, 20 Holes in upper row, ... each, Net,	315.00

Slide Rules.

Thacher's Calculating Instrument.



1740.

No. 1740.	Thacher's Calculating Instrument for performing the greatest variety of useful calculations with unexampled rapidity and great accuracy. Cylinder 18 inches, in a polished mahoghany box, each,	$35.00
No. 1741.	Thacher's Calculating Instrument, with the addition of a 3 inch Reading Glass, sliding on a brass bar, adjustable to any part of the instrument for focus, ... each,	45.00

The Thacher's Calculating Instrument consists of a cylinder 4 inches in diameter and 18 inches long, working within a frame work of triangular bars. The scales, the longest ever made, contain upwards of 33,000 divisions and 17,000 engraved figures, executed upon a dividing machine, made expressly for this instrument; they are of such great length, viz.: 30 and 60 feet each, that results can be obtained to the fourth and usually to the fifth place of the figures, sufficient to satisfy nearly every requirement of the professional or business man.

By the use of this instrument the drudgery of calculation is overcome, the mind is greatly relieved, and the results obtained are more reliable than when worked out in the usual way. Examples in multiplication, division, proportion, powers or roots, involving not more than three quantities, are solved by one operation, and any number of values of a single variable are found by one setting of the instrument, for example, any of the formula

$$\frac{ax}{b}, \frac{ax^2}{b}, \frac{ax}{b^2}, \frac{ax_2}{b^2}, \sqrt{\frac{ax}{b}}, \sqrt{\frac{a^2x}{b}}$$

in which a and b may have any values and x any number of values are readily solved by one setting. Squares, square roots, cube roots and reciprocals are also readily worked.

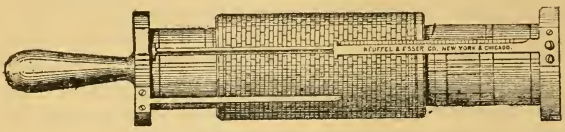
The useful applications of the instrument are almost unlimited; among these may be mentioned, finding the stresses and sections in trusses and girders, mensuration, estimates of work and material, solving trigonometrical formula, making and applying tables, problems in the mechanical powers, machinery and hydraulics, problems of simple and compound interest, discount and fellowship, pro-rating, gauging, exchange and the conversion of weights and measures.

It will be found useful to the Engineer, Architect, Actuary, Scientist, Manufacturer, Mechanic, Navigator and Accountant.

A book containing a full description of the instrument, all the necessary rules for operating it, and numerous examples, both general and special, will accompany each instrument.

Testimonials will be furnished on application.

Fuller's Spiral Slide Rule.

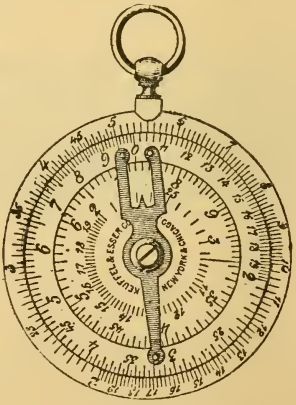


1742.

1742. Fuller's Spiral Slide Rule, in mahogany box, , each, $28.00

Fuller's Spiral Slide Rule consists of a cylinder which can be moved up or down and turned round a sleeve which is attached to the handle. A single logarithmic scale, 42 feet long, is wound round the cylinder spirally, and ratios are established by means of two pointers or indices, one attached to the handle and the other to an axis which slides in the sleeve.

Charpentier Calculator.



1743.

No. 1743. Charpentier Calculator, ... each, $5.00

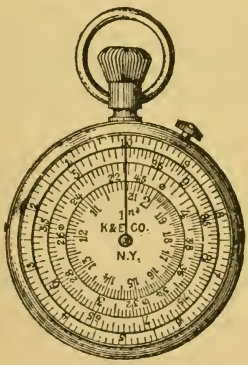
The Charpentier Calculator is a circular Slide Rule, 2⅜ inches in diameter, with a circular slide which is revolved and set by the handle as may be required. This instrument reads scale against scale like the ordinary slide rule, and being made of metal, is but slightly subject to atmospheric variations. Square roots, sines and tangents as well as logarithms may be found with it, and as the circular scale is equivalent to a straight one 5⅞ inches long, results may be read off with a fair degree of accuracy. The small dimensions and light weight of the instrument make it a most useful pocket companion.

Map Measures.

No. 1692. Map Measures, 5 inch Swiveling Metal Handle, with lock nut, etc., and 2 graduations, ... $3.20

No. 1694. Map Measures, watch pattern dial, with 2 graduations, 1.25

Boucher Calculator.



1743½

No. 1743½. Boucher Calculator, ... each, $8.50

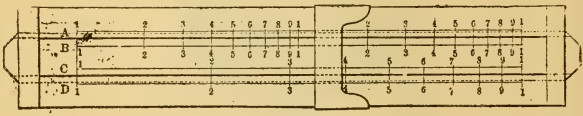
The Boucher Calculator resembles an ordinary stem-winding watch, with an open face (glazed) back and front. Ratios are set off by means of pointers or indices. It is 2 1-16 inches diameter by 9-16 thick, and very convenient for the pocket.

Duplex Slide Rule.

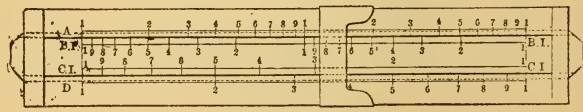
1744. Patented October 6th, 1891.

No. 1744.	Duplex Slide Rule, patented, 10 inch, divided on celluloid facings, with brass runner and with Arithmetical Slide, with Directions, in case, each,	$6.50
No. 1744 A.	Same as No. 1744, but with Trigonometrical Slide, in case, ... each,	6.50
No. 1744 B.	Same as No. 1744, but with both the Arithmetical and Trigonometrical Slides (interchangeable,) in case, ... each,	8.00

The "Duplex" Slide Rule is similar in most respects to an ordinary Mannheim slide rule (No. 1746), its distinguishing feature being that the slide itself is of the same thickness as the rule and has its two faces flush with those of the rule. The rule and slide are fully graduated on both sides, scales A and D being alike on each side of the rule, whereas scales B and C on the slide, are graduated on the upper face in the usual way like A and D, but on the under face in REVERSED ORDER, the initial indices being on the right hand, and the scales progressing toward the left, as shown in the figures. The indices of the scales of one face coincide with those of the other face, and a metallic runner, encircling the whole rule, enables coinciding points on any scale of either face to be at once found.



Front or Upper Face.



Back or Under Face.

This improvement simplifies considerably the working out of many complex calculations, besides allowing of such computations as

$$a \times b \times c = x, \quad \sqrt[2]{a^5} = x,$$

etc., to be performed with ONE SINGLE setting of the slide. This slide is designated above as the "Arithmetical."

To still further increase the value of the Duplex Slide Rule, an interchangeable "Trigonometrical Slide," having scales of sines, tangents and equal parts on one side, and the ordinary scales B and C on the other side, is also provided when desired, by means of which a great variety of problems involving the functions of the sides and angles of triangles, may be quickly solved, the trigonometrical formula being worked out on one side and the arithmetical portion on the other side of the slide rule without inversion or displacement of the slide.

With these modifications the necessity of taking the slide out to invert it, is avoided, besides facilitating the setting of the slide and reading of results, as scales A and B.I., as well as C.I. and D lie side by side; all risk of damaging the slide during the operations of inversion is also removed.

1745.

No. 1745. Slide Rule, 10 inch, boxwood, . . . each, $3.50

This is the old form of Slide Rule, now generally superseded by improved forms like the Mannheim and the Duplex. The top scale on the rule and the two scales on the slide are double, being graduated from 1 to 100, while the bottom scale on the rule is a single one, graduated from 1 to 10, giving the square roots of the other scales. All ordinary computations have to be effected on the upper scales, so that the same degree of accuracy can not be attained as with the Duplex and the Mannheim.

Mannheim Slide Rule.

1746.

No 1746. Slide Rule (Mannheim), 10 inch, divided on celluloid facings, with brass indicator, with Directions, ... each, $4.50

No. 1748. Slide Rule (Mannheim), 20 inch, divided on celluloid facings, with brass indicator, with Directions, ... each, $16.50

The 20 inch Slide Rules have the great advantage that they admit of finer divisions and consequent closer reading than the 10 inch. Of course the longer rules are more liable to warp, and thereby give rise to complaint, but they are nevertheless preferred on account of the advantages of the finer divisions.

Stadia Slide Rules.

No. 1749. Stadia Slide Rule, 20 inch, celluloid faced, each, . $13.50

The Stadia Slide Rule is especially designed to solve the two equations generally used in stadia measurements, viz.;

$$\text{Height} = \frac{\text{Stadia Distance}}{2} \times \text{Sin } 2\,a$$

and

$$\text{Distance} = \text{Stadia Distance} \times \text{Cos } 2\,a.$$

It is 20 inches long, with fine graduations on celluloid, and will be found to be of great use to the Topographer, as it enables him to compute quickly the results of his labors in the field.

Directions (except when furnished with the rule), .	each,	.25
"The Slide Rule," complete Manual, by Wm Cox, .	"	.50
Manuals of the Duplex and Mannheim Slide Rules, bound together, ...	"	.75

Kern's Stadia Slide Rules.

German Silver.

Topographical, with Indicator 400° . . . . , .	Net,	$10.50
" simplified, 360°	"	8.75

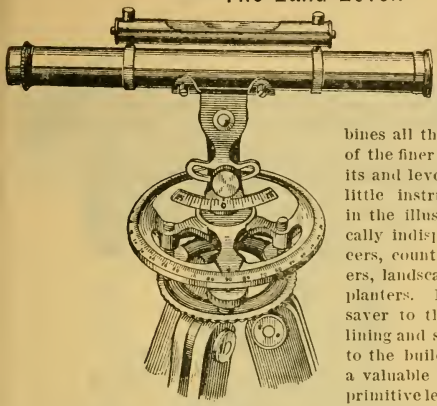
Leveling Rods and Poles.

Philadelphia Rod, 7 feet, sliding to 12 feet, . . .	Net,	$16.00
Light Philadelphia Rod, 6½ feet, sliding to 12 feet, .	"	14.00
New York Rod, 6½ feet, sliding to 12 feet, . . .	"	14.00
Boston Rod, 6½ feet, sliding to 11½ feet, . . .	"	16.00
Architects' Rod, 5½ feet, sliding to 10⅜ feet, . . .	"	6.00
Troy Rod, 6 feet, sliding to 12 feet, ...	"	10.00

Leveling Poles.

Iron Tubular Transit Poles, 6 feet, ...	Net,	$2.75
" " 8 "	"	3.00
" " 10 "	"	3.50
Wood Leveling Poles, 6 "	"	2.00
" " 8 "	"	2.25
" " 10 "	"	2.50

The Land Level.

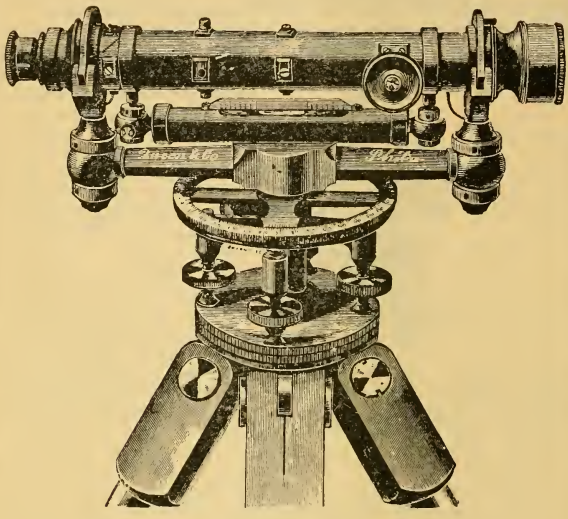


THE Land Level as recently introduced by us, is the only low priced instrument on the market that combines all the working features of the finer engineering transits and levels. This complete little instrument, as shown in the illustration, is practically indispensable to engineers, county surveyors, farmers, landscape gardeners and planters. It is a great labor saver to the wheelwright in lining and setting up shafting, to the builder and bricklayer a valuable substitute for the primitive level board formerly used in setting up foundations, floors, sills and in running grades. It is also an excellent instrument for the scholar, illustrating the elementary principles of engineering and surveying. It can be used for angulation, level lines, grading streets, sewers and drains.

The construction is extremely simple, having as few parts as possible and combines compactness and efficiency so that anybody can at once work it successfully and without special explanations. The telescope is 8½ inches long having achromatic objectives, with magnifying power 10 times. The eye-peice has four (4) lenses showing objects in their natural position. The cross wires are fixed in the telescope so that there is no danger of their losing the adjustment. The level is mounted on top of the telescope and is provided with adjusting screws. The telescope and level are securely mounted on a swivel bearing, which permits of an elevation or inclination of the telescope 25 degrees from the level line and can be clamped in any position. The levelling frame is provided with four (4) levelling screws whose lower ends are ball jointed. The centre is cast of one piece with the leveling plate and its outer edge bevelled and graduated into degrees. The socket is carefully fitted to the centre of the levelling frame and is also provided with a clamp screw. The arc is cast on this socket and graduated into degrees. The lower end of the levelling plate has a half ball which connects the tripod plate to the upper part, as in the case of the regular transits and levels. The instrument is screwed to a substantial tripod and is packed in a wooden carrying case, making it exceedingly portable.

The Land Level, for horizontal angles, ...	$20.00
The Land Level, for horizontal and vertical angles, . .	25.00

The Architects' Level.

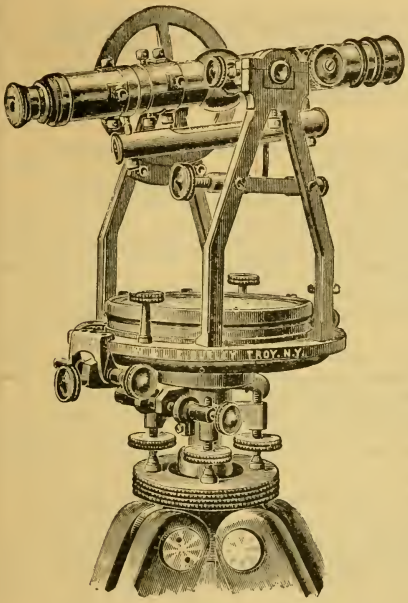


A 1576.

THE Architects' Level as illustrated above is an admirable instrument and can be highly recommended, as it has met with a very large sale among architects, builders, millwrights and others engaged in construction, and among engineers and surveyors, by whom it is used in city work. The telescope is 12 inches long, of the finest optical qualities and has magnifying power of about 25 diameters. It has truly ground level of medium sensitiveness which is graduated and securely mounted under the telescope. The telescope has red metal collars, which rest in the Y's and are held in position by clips which are hinged and locked the same as in engineers' level. The instrument turns upon a horizontal circle 3 inches in diameter, graduated from 0 to 90 each way, and is read to five minutes by a vernier which is fixed to the spindle. The instrument is screwed on tripod and is packed in box fitted with sun shade, plumb bob reading glass, screw driver, adjusting pins and metal trivet.

A 1576, Architects' Level, as above, ... $50.00

Reconnoissance Transit.



No. 100.

IN response to a demand for a very light Transit for rapid work, where extreme accuracy is not required, the Reconnoissance Transit was introduced ten years ago. Its portability, with its capabilities for a large variety of rapid work, have already made this a very popular instrument.

It has a needle of 3½ inches, a limb of 5 inches in diameter, graduated on sterling silver, reading by one double vernier to single minutes, and is supplied with new spring tangent movement like the larger instruments.

The telescope has a power of from 18 to 20 diameters, and is furnished with stadia wires for measuring distances; it has also, as shown, a long level to telescope, vertical circle reading to 5 minutes, and the clamp and tangent to axis.

The compass circle is arranged to set off the variation of the needle, the movement being made by a pinion.

It has also, as shown, a leveling head with a shifting centre, and with spring clamp and tangent, and the instrument is set upon a light extension tripod, the legs of which close up to about three feet.

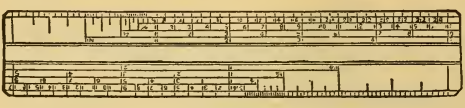
The weight of this transit without tripod is about 7¾ pounds; with tripod complete, about 15 pounds.

Price $115.00

Ivory Scales and Protractors.

No. 597. Sector, 6 inches, opens to 12 inches, ... $3.00

No. 598. Scale, 6 inches long, same as in School Cases of Instruments, . .75



599.

No. 599. Architects' Scale, 12 inches long, with 16 different Graduations, all brought to the edges, ... $3.00

No. 600. Square Protractor, 6 inches long, 1¾ inches wide, whole degrees, with 6 Scales of Equal Parts, 4 Scales of Feet and Inches, 2 Scales of Chords and Diagonal Scale, ... $1.75

No. 601. Square Protractor, 6 inches long, 1¾ inches wide, whole degrees, with 6 Scales of Equal Parts, 8 Scales of Feet and Inches, 2 Scales of Chords and Diagonal Scale, ... $3.00

No. 602. Square Protractor, 6 inches long, 2 inches wide, whole degrees, with 8 Scales of Equal Parts, 10 Scales of Feet and Inches, 2 Scales of Chords, Diagonal Scale, and Line of 40 on lower edge, ... $3.25

No. 603. Square Protractor, same as No. 601, but in ½ degrees, ... $4.00

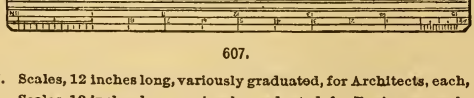
No. 604. Square Protractor, 6 inches long, 2¼ inches wide, ½ degrees, with 10 Scales of Equal Parts, 12 Scales of Feet and Inches, 2 Scales of Chords, Diagonal Scale, and Line of 40 on lower edge, ... $4.50

NOTE.—Square Ivory Protractors of larger dimensions and more fully divided, if desired.

Frost & Adams Co's Boxwood Protractors and Scales.

No. 605. Square Protractor, 6 inches long, 1¾ inches wide, whole degrees, with 6 Scales of Equal Parts, 4 Scales of Feet and Inches, 2 Scales of Chords, and Diagonal Scale, ...50

No. 606. Scale, 6 inches long, same as in School Cases of Instruments, . .20



607.

No. 607. Scales, 12 inches long, variously graduated, for Architects, each, .75

No. 608. Scales, 12 inches long, variously graduated, for Engineers, each, .75

Frost & Adams Co's Triangular Boxwood Scales.

No. 609. Scale 24 inches long, graduated 3-32, 3-16, ⅛, ⅙, ⅜, ½, ¾, 1, 1½, 3 inches and 16ths to the foot $4.25

No. 610. Same as No. 609, 12 inches long, ... $1.50

A. W. Faber's

Improved Calculating Rule.

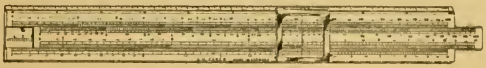
10½ inches Long.

The Slide Rule has been defined as "an instrument for mechanically effecting calculations by logarithmic computation" (Pickworth, The Slide Rule), and it is said that "by its aid various arithmetical, algebraical and trigonometrical processes may be performed with ease and rapidity, the results obtained being sufficiently accurate for almost all practical requirements."

The A. W. Faber Calculating Rule consists of a "stock" or "body" about 10 inches in length, 1¼ inches in width, and ⅜ inch in thickness, a movable strip or "slide" inserted into the "body," surfaces level, and a "runner" about an inch square fitted with glass which, sliding freely the entire length of the instrument, serves to connect the fine graduations of the several scales in the "body" and "slide." The rule is made of boxwood, with or without celluloid facings.

While the plain boxwood rule is the more durable, the rule with celluloid face can be more easily read, and is on that account often preferred.

A Manual or Book of Instructions, of 35 printed pages and 12 diagrams accompanies each rule, explaining the general principles which govern the instrument and furnishing practical illustrations of its usefulness.



No.		
350.	A. W. Faber's Calculating Rule, plain boxwood, . .	$3.50
360.	A. W. Faber's Calculating Rule, with celluloid face, .	$3.50

Triangular Scales,

With White Celluloid Edges.

6 inch Architects' or Engineers' graduation,					each, Net,	$1.50
12	"	"	"	"	"	2.50
18	"	"	"	"	"	4.50
24	"	"	"	"	"	6.50

Flat Scales,

With White Celluloid Edges.

6 inch Architects' or Engineers' graduation,					each, Net,	.75
12	"	"	"	"	"	1.25
18	"	"	"	"	"	2.25
24	"	"	"	"	"	3.00

Triangular Scales of Metal.

12 inch Architects', graduated like No. 609,	each, Net,	$2.50
12 inch Engineers', graduated like No. 612,	"	2.50

Triangular Boxwood Metric Scales.

20 centimeters long,	each, Net,	$1.25
30 " "	"	1.50
50 " "	"	2 75

Triangular Scales Made of Maple.

For School Use.

12 inch, graduated 1/8, 1/4, 1/2, 1, 3/8, 3/4, 1 1/2 and 3 inch, for Architects, ... each, Net, .75

Triangular Scales Made of Steel.

12 inch, graduated for Architects or Engineers, . . each, Net, $3.00

609.

No. 611. Same as No. 609, 6 inches long, ...75

No. 612. Chain Scale, 24 inches long, graduated 10, 20, 30, 40, 50, 60 parts per inch, ... $4.25

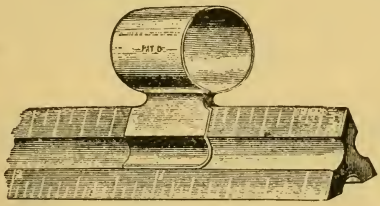
No. 613. Same as No. 612, 12 inches long, . . . $1.50

No. 614. Same as No. 612, 6 inches long, ...75

No. 615. Chain Scale, 12 inches long, graduated 20, 30, 40, 50, 60, 80 parts per inch, ... $1.50

NOTE.—A large variety of Triangular and Flat Boxwood Scales, finely graduated, and to read both ways; also, Metric Scales, several styles, constantly in stock.

Triangular Scale Guard.



No. 616. Triangular Scale Guard, German Silver, ...25

NOTE.—With this attachment, the Triangular Scale is so guarded that the side in use can not be mistaken.

Paper Scales.

19 Inches Long, 1 3-4 Inches Wide.

No. 617. Series A 6 in Set, graduated ¼, ½, ¾, 1, 1½, 3 inches to the foot, $1.00

No. 618. Series B. 6 in Set, graduated 3-32, ⅛, 3-16, 5-16, ⅜, ⅞, inches to the foot, ... $1.00

No. 619. Series C. 6 in Set, graduated 10, 20, 30, 40, 50, 60 parts per inch, $1.00

Single Scales of the above, each, ...20

Steel Rules,

For Machinists.

No. 620. Rule, graduated to 8, 10, 12, 16, 20, 24, 32, 48, 50, 64, 100 parts per inch,

3 inches long, ...	.50	9 inches long, ...	$1.50
4 "	.75	12 " . .	2.00
6 "	1.00	24 " . . .	4.00

Frost & Adams Co's

Straight Edges.

621.

No. 621. Hardwood Lined, Square Edges, Thin,

24 inches long,	.40	48 inches long,	$1.15
30 "	.50	54 "	1.50
36 "	.70	60 "	2.00
42 "	.85	72 "	3.00

No. 622. Hardwood, Beveled Edge, Thick,

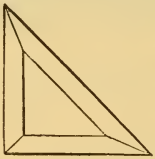
12 inches long,	.15	30 inches long,	.30
15 "	.15	36 "	.40
18 "	.20	42 "	.50
24 "	.25		

No. 623. Steel, with Square Edges. Nickel-Plated.

15 inches long,	$1.15	36 inches long,	$3.50
18 "	1.25	42 "	5.00
21 "	1.75	48 "	8.00
24 "	2.25	60 "	10.25
30 "	3.25	72 "	16.00

Frost & Adams Co's Wood Triangles.

624.



625.

626.

627.

No. 624. Pearwood or Cherry Triangles, Framed, 30 × 60 degrees,

7 inches long,	.20	11 inches long,	.30
9 "	.25	14 "	.40

No. 625. Pearwood or Cherry Triangles, Framed, 45 degrees,

5 inches long,	.20	9 inches long,	.30
7 "	.25	11 "	.40

No. 626. Pearwood or Cherry Triangles, Lined, 30 × 60 degrees,

7 inches long,	.25	14 inches long,	.60
9 "	.40	17 "	.75
11 "	.50		

No. 627. Pearwood or Cherry Triangles, Lined, 45 degrees,

5 inches long,	.25	11 inches long,	.60
7 "	.40	14 "	.75
9 "	.50		

NOTE.- Schroder's Pearwood Triangles, of superior make, constantly in stock.

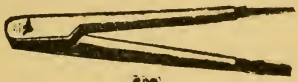
No. 627½. Mahogany Triangles, Ebony Lined, 30 × 60 degrees.

7 inches long,	.60	14 inches long,	$1.00
9 "	.70	17 "	1.25
11 "	.80	20 "	1.[illegible]

No. 627¾. Mahogany Triangles, Ebony Lined, 45 degrees.

5¾ inches long,	.60	11½ inches long,	$1.00
7¾ "	.70	14 "	1.25
9 "	.80	16¼ "	1.7[illegible]

Blackboard Dividers.



628.

No. 628. Hardwood, 18 inches long, ... $1.00
No. 628. J. W. S. & Co., 13 inches long, ... 1.00

NOTE.—A variety of patterns of German or American manufacture, at various prices, always in stock.

Irregular Curves.

No. 629. Pearwood Curves, Common, according to size, ...15 to .30
No. 630. Pearwood Curves, Fine, according to size, ...25 to .50
No. 631. Horn Curves, according to size, ...50 to .75

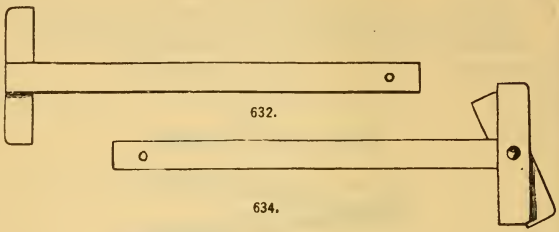
Frost & Adams Co's

T Squares.

NOTE.—The following list of T Squares comprise the various patterns and styles mostly in use. Extra T Squares in Fancy Woods, either with Fixed or Shifting Heads, at various prices. Also extra large T Squares made to order.

No. 632. Pearwood, well seasoned, Fixed Head.

15 inches long	.35	42 inches long	.80
18 "	.40	48 "	1.25
21 "	.45	54 "	1.35
24 "	.50	60 "	1.50
30 "	.60	72 "	2.00
36 "	.70		

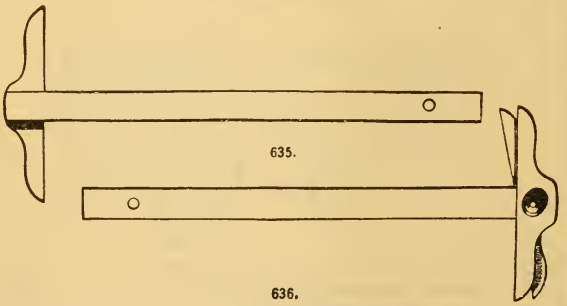


632.

634.

No. 634. Pearwood, well seasoned, Shifting Head, Swivel No. 637.

15 inches long	.70	42 inches long	$1.25
18 "	.75	48 "	1.50
21 "	.80	54 "	2.00
24 "	.90	60 "	2.25
30 "	1.00	72 "	2.50
36 "	1.15		



635.

636.

No. 635. Maple Blade, Black Walnut, Fixed Head.

18 inches long	.45	42 inches long	$1.05
21 "	.50	48 "	1.20
24 "	.60	54 "	1.40
30 "	.75	60 "	1.75
36 "	.90	72 "	2.00

No. 636. Maple Blade, Black Walnut Head, Shifting, Swivel No. 637.

18 inches long	$1.00	42 inches long	$1.65
21 "	1.10	48 "	1.85
24 "	1.20	54 "	2.10
30 "	1.35	60 "	2.50
36 "	1.50	72 "	3.00

Mahogany Ebony-Lined T Squares.

Fixed Heads.

No. 636⅛.

18 inches long,	.85
21 "	.90
24 "	1.00
30 "	1.20
36 "	1.40
42 "	1.60
48 "	1.85
54 "	2.25
60 "	3.50
72 "	4.50

Mahogany Ebony-Lined T Squares.

Moveable Heads.

No. 636¼.

24 inches long,	$1.75
30 "	2.00
36 "	2.25
42 "	2.50
48 "	2.80
54 "	3.25
60 "	4.50
72 "	5.50

Steel T Squares.

Steel Blade, Nickel-Plated, Fixed Japanned Iron Head.

No. 636½.

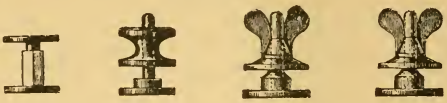
18 inches long,	Net, $3.00	30 inches long,	Net, $4.50
24 "	" 3.50	36 "	" 5.50

Steel Blade, Nickel-Plated, Moveable Japanned Iron Head.

No. 636¾.

18 inches long,	Net, $4.25	30 inches long,	Net, $5.75
24 "	" 5.00	36 "	" 6.75

Swivels for T Squares.



637. 638. 639. 640.

No. 637. Common Swivel, Brass, ...25
No. 638. Fine Swivel, Milled Head, Brass, ...40
No. 639. Fine Swivel, with Nut and Washer, Brass, ...80
No. 640. Fine Swivel, with Nut and Washer, German Silver, ... 1.00

Parallel Rules and Trammels.

641.

No. 641. Parallel Rule, Ebony, Brass Mounted,

6 inches long,	.25	15 inches long,	$1.00
9 "	.50	18 "	1.25
12 "	.75	24 "	2.50

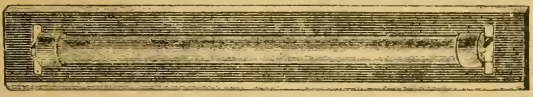
NOTE.—Winsor & Newton's Ebony Parallel Rules, like above pattern, at higher cost.

642.

No. 642. Parallel Rule, all German Silver, on Rollers, 15 inches long, . $12.00
" " " " 18 " . 15.00

No. 643. Parallel Rule, all Brass, on Rollers,

9 inches long,	$4.50	15 inches long,	$10.00
12 "	8.50		



644.

No. 644. Parallel Rule, Ebony, on Rollers,

12 inches long,	$3.25	18 inches long,	$5.00
15 "	4.00		

No. 645. Parallel Rule, Ebony, Ivory Edges Graduated, on Rollers,

12 inches long,	$5.00	18 inches long,	$7.50
15 "	6.50		

No. 646. Elliptic Trammel, German Silver, finely constructed, . . . $20.00

No. 647. Elliptic Trammel, German Silver, with Pen and Pencil Points, . $6.00

Frost & Adams Co's

Hard Rubber Triangles and Curves.

648.

649.

No. 648. Hard Rubber Triangles, 30 × 60 degrees,

4 inches long,	.20	11 inches long,	.75
5 "	.25	12 "	.90
6 "	.30	13 "	1.00
7 "	.35	14 "	1.25
8 "	.45	15 "	1.40
9 "	.55	16 "	1.50
10 "	.65		

No. 649. Hard Rubber Triangles, 45 degrees,

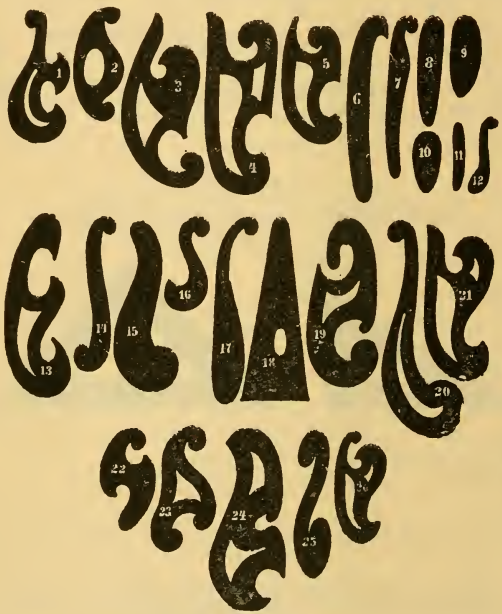
4 inches long,	.25	11 inches long,	$1.10
5 "	.35	12 "	1 30
6 "	.45	13 "	1.60
7 "	.50	14 "	1.85
8 "	.65	15 "	2.15
9 "	.75	16 "	2.50
10 "	.95		

No. 650. Hard Rubber Curves.

No. 1,	.35	No. 4,	.50
2,	.35	5,	.40
3,	.50	6,	.35

No. 650. Hard Rubber Curves.

No. 7,	.30	17,	.35
8,	.25	18,	.40
9,	.25	19,	.50
10.	.20	20,	.50
11,	.20	21,	.45
12,	.30	22,	.35
13,	.50	23,	.40
14,	.35	24,	.60
15,	.45	25,	.40
16,	.35	26,	.35



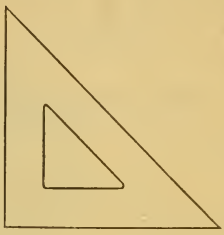
Rubber Splines.

12 in.	18 in.	24 in.	30 in.	36 in.	42 in.	48 in.	54 in.	60 in.
.25	.30	.35	40	.45	.50	.70	1.00	1.25

Rubber Protractors.

No. 651.	Circular Rubber Protractor, 6 inches diameter, ½ degrees,	Net,	$3.75
No. 652.	Circular Rubber Protractor, 8 inches diameter, ½ degrees,	"	5.00
No. 653.	Circular Rubber Protractor, 10 inches diameter, ½ degrees,	"	16.00

Celluloid Triangles.



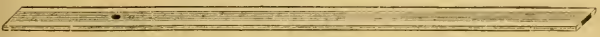
Celluloid Triangles, 30 x 60 degrees.

4 inches long	.25	9 inches long	.65	13 inches long	$1.25
5 " "	.35	10 " "	.75	14 " "	1.65
6 " "	.40	11 " "	.85	15 " "	2.00
7 " "	.45	12 " "	1.00	16 " "	2.50
8 " "	.55				

Celluloid Triangles, 45 degrees.

4 inches long	.35	9 inches long	.95	13 inches long	$1.90
5 " "	.45	10 " "	1.10	14 " "	2.20
6 " "	.55	11 " "	1.35	15 " "	2.65
7 " "	.65	12 " "	1.65	16 " "	3.15
8 " "	.75				

Celluloid Lined Straight Edges.



Celluloid Lined Straight Edges, square edges.

12 inches long	.45	24 inches long	$1.00	42 inches long	$2.50
15 " "	.55	30 " "	1.25	48 " "	3.50
18 " "	.70	36 " "	1.75		

Celluloid Curves.

Of the same shapes as the Rubber Curves on page 137.

No. 1	.50	No. 11	.30	No. 20	.75
2	.50	12	.35	21	.60
3	.65	13	.65	22	.50
4	.65	14	.40	23	.50
5	.55	15	.50	24	.75
6	.50	16	.35	25	.35
7	.40	17	.50	26	.50
8	.40	18	.50	27	.90
9	.35	19	.60	28	.90
10	.30				

Copenhagen Ship Curves of Hard Rubber.

Set of 120 Curves, in a walnut case, ... $65.00
Separate Curves, each, from . . . . . .30 to 1.50
The above of Wood or Celluloid, if desired.

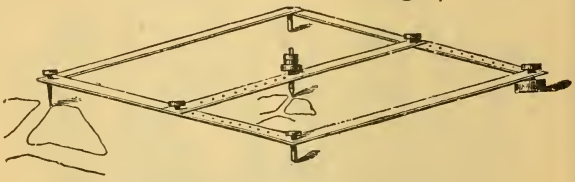
Hard Rubber Logarithmic Spiral Curve.

Hard Rubber Logarithmic Spiral Curve, ... Net, $1.50

Amsler's German Silver Integrater.

A mechanical device for aiding a ship architect in giving the exact account of a vessel's stability, ... $175.00

Frost & Adams Co's Pentagraphs.

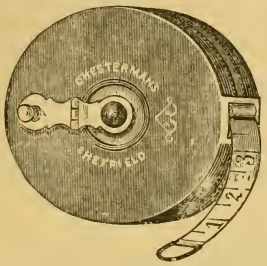


654.

No. 654. Pentegraph, 20 inches long, of Hardwood,
No. 1. Heavily mounted with nickel plated elbow joint wheel, pencil holder and exchangeable point; finely polished, black figures, in neat box, . . $2.50
No. 2 Brass mounted, with brass elbow joint wheel, pencil holder and moveable point; polished, black figures, in box, ... 2.00
No. 3. Brass mounted, same as No. 2 in every respect except that it is not polished, in box, . . . 1.50
No. 4. Brass mounted, same as No. 3 except movable point instead of wheel, ... 1.00
No. 5. Medium quaiity, ...50
No. 6. Small, ...25
No. 655. Pentagraph, 17 inches long, of Hardwood, ...85
No. 656. Pentagraph, 20 inches long, of Blackwood, Brass Mountings, and Rollers, in Case, ... 18.00
No. 657. Pentagraph, 27 inches long, of Blackwood, Brass Mountings, and Rollers, in Case, ... 20.00

Chesterman's

Metallic and Steel Tape Measures.



658.

No. 658. Metallic Tape, in strong, bent Leather Case, divided 10ths or 12ths.

24 feet long,	$2.40	66 feet long,	$4.00
33 "	2.75	75 "	4.75
50 "	3.50	100 "	5.50

No. 659. Steel Tape, in strong, bent Leather Case, Folding Handle; the most accurate measure, divided 10ths or 12ths.

25 feet long,	$4.50	66 feet long,	$9.20
33 "	5.20	75 "	10.40
50 "	7.20	100 "	12.80

Lufkin's Reliable Steel Tapes.

In Leather Case.

25 feet long,	$4.50	75 feet long,	$10.40
50 "	7.20	100 "	12.80
66 "	9.20		

Lufkin's Metallic Tapes.

25 feet long,	$2.10	75 feet long,	$3.60
33 "	2.40	100 "	4.50
50 "	2.90		

Lufkin's Rival Steel Tapes.

In Nickeled Steel Case.

25 feet long,	$3.25	75 feet long,	$5.25
50 "	4 00	100 "	6.75

"Columbia" Excelsior Steel Tapes.

In Leather Case.

23 feet long,	Net, $5.25	75 feet long,	Net, $9.70
50 "	" 6.90	100 "	" 12.10
66 "	" 8.70		

"Home" Steel Tapes.

In Leather Case.

25 feet long,	Net, $2.90	75 feet long.	Net, $4.70
50 "	" 3.50	100 "	" 6.00

"London" Excelsior Metallic Tapes.

In Leather Case.

25 feet long,	Net, $1.55	66 feet long,	Net, $2.00
33 "	" 1.85	75 "	" 2.90
50 "	" 2.30	100 "	" 3.70

Eddy's Steel Tapes.

50 feet long, steel, in 10ths or 12ths,	$6.00
100 " " "	15.00

Eddy's "Star" Steel Tapes.

50 feet long, in 10ths or 12ths,	Net, $4.50
66 " " "	" 5.50
75 " " "	" 6.50
100 " " "	" 8.00

NOTE.— We carry Paine's and Roe's Tapes of all styles.

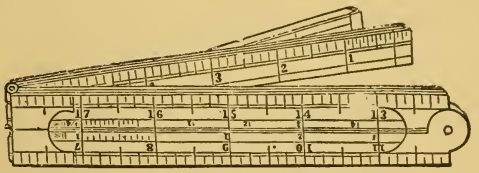
660.

No. 660. Pocket Steel Tape, in German Silver Case, with Spring and Stop,

3 feet long,	$2.00	9 feet long,	$4.00
5 "	2.50	12 "	5.50
6 "	2.75		

Pocket and School Rules.

Boxwood, Four Fold.



No. 661. Round Joint, Middle Plates, 8ths and 16ths of inches, ⅝ inch wide, 12 inches long, ...20

No. 662. Square Joint, Middle Plates, 8ths and 16ths of inches, ⅝ inch wide, 12 inches long, ...25

No. 663. Square Joint, Edge Plates, 8ths and 16ths of inches, ⅝ inch wide, 12 inches long, ...35

No. 664. Square Joint, Bound, 8ths and 16ths of inches, ⅝ inch wide, 12 inches long, ...75

No. 665. Arch Joint, Middle Plates, 8ths and 16ths of inches, ⅝ inch wide, 12 inches long, ...30

No. 666. Arch Joint, Edge Plates, 8ths and 16ths of inches, ⅝ inch wide, 12 inches long, ...40

No. 667. Arch Joint, Bound, 8ths, 10ths, 12ths and 16ths of inches, 13-16 inch wide, 12 inches long, ... $1.00

No. 668. Arch Joint, Edge Plates, 8ths, 10ths, 12ths and 16ths of inches, 100ths of a foot, 13-16 inch wide, 12 inches long, ...60

No. 669. Arch Joint, Edge Plates, 8ths, 10ths and 16ths of inches, Drafting Scale, 1⅜ inches wide, 24 inches long, ...75

No. 670. Round Joint, 8ths and 16ths of inches, Two Fold, 1⅜ inches wide, 24 inches long, ...35

Ivory, Four Fold.

No. 671. Square Joint, German Silver, Edge Plates, 8ths and 16ths of inches, ⅝ inch wide, 12 inches long, ... $1.25

No. 672. Arch Joint, German Silver, Bound, 8ths and 16ths of inches, ⅝ inch wide, 12 inches long, . , . . $2.67

No. 673. Arch Joint, Edge Plates, German Silver, 8ths, 10ths, 12ths and 16ths of inches, (100ths of a foot on edges of unbound,) 13-16 inch wide, 12 inches long, . . 2.50

No. 674. The same as No. 673, Bound, ... 3.50

No. 675. Square Joint, Edge Plates, German Silver, 8ths, 10ths, 12ths and 16ths of inches, (100ths of a foot on edges of unbound,) 13-16 inch wide, 12 inches long, . . 2.17

No. 676. Same as No. 675, Bound, ... 3.17

No. 677. Square Joint, Edge Plates, German Silver, 8ths and 16ths of inches, ⅝ inch wide, 12 inches long, . . 1.50

No. 678. The same as No. 677, Bound, ... 2.50

No. 679. Caliper, Square Joint, German Silver, 8ths and 16ths of inches, Two Fold, 13-16 inches wide, 12 inches long, ... 1.25

Frost & Adams Co's

Folding Pocket Rules.

No. 679a.

2 feet,	4 fold,	1-16 × 1-16 inches,	with Spring,	. . .	each,	.35
3 "	6 "	"	"	. . .	"	50
4 "	8 "	"	"	. . .	"	.65
5 "	10 "	"	"	. . .	"	.85
6 "	12 "	"	"	. . .	"	1.00
8 "	16 "	"	"	. . .	"	1.30
4 "	8 "	1-10 × 1-10 inches,	"	. . .	"	.65
4 "	8 "	1-16 and meter,	"	. . .	"	.65

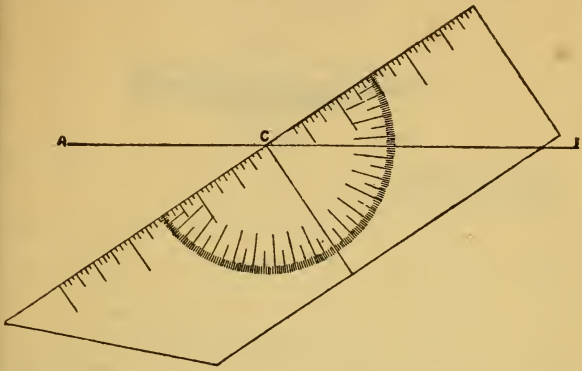
School Rules.

No. 680. Boxwood, Beveled Edge, 8 and 16ths of inches, ¾ inch wide, 12 inches long, ...15

No. 681. Boxwood, Beveled Edges, 10ths and 16ths of inches, ¾ inch wide, 12 inches long, ...20

No. 681×. Boxwood Beveled Edges, metric graduations, . . .20

The Remington Transparent Scaled Protractor.



An instrument which enables the user to draw in one operation a line of any given length, through any desired point, making any required angle with some other line. It can be carried in the vest pocket and is very superior to the method now in use.

Made in two sizes, ... 6 inch, .75; 12 inch, $1.25

Also, Triangles, with Scale and Protractor, of Every Description.

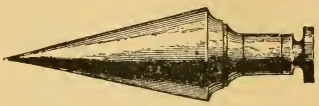
Pamphlets of instructions and examples with every Scaled Protractor.

Flat Maple Rulers and Paper Cutters.

No. 101. 12-inch Rulers, divided 1-16 in. . . . each, .05

No.		Each.	No.		Each.
102.	12-inch, Plain edge, .	.08	105.	12-inch, Brass edge, .	.15
102.	15 " " . .	.10	105.	15 " " .	.20
102.	18 " " . .	.15	105.	18 " " .	.25
102.	21 " " . .	.20	105.	21 " " .	.30
102.	24 " " . .	.25	105.	24 " " .	.40

Plumb Bobs.



684.

No. 682.	Iron Plumb Bob, ...	.75
No 682a.	Small Brass Bob, for schools, ...	.25
No. 682b.	Small Brass Bob, Nickeled, for schools, ...	.40
No. 683.	Brass Plumb Bob, Steel Point, Screw Cap, ...	2.00
No. 684.	Brass Plumb Bob, Steel Point, Screw Cap, medium, .	2.25
No. 685.	Brass Plumb Bob, Steel Point, Screw Cap, large, . .	2.50
No. 685a.	Mercury Plumb Bob, all Steel, 3½ ounces, 4 inches long,	1.00
No. 685b.	Mercury Plumb Bob, all Steel, 6 ounces, 4½ inches long,	1.50
No. 685c.	Mercury Plumb Bob, all Steel, 12 ounces, 5⅜ inches long,	2.00
No. 685d.	Mercury Plumb Bob, all Steel, 16 ounces, 6 inches long,	2.50

Paper Weights.

No. 686.	Lead Weight, 2½ inches in diameter, covered with Leather, ...	.50
No. 687.	Iron Weight, with Knob, 2¼ inches in diameter, Nickel-Plated, ...	1.00

Chamois Skins.

No. 688. Chamois Skins, in various small and large sizes, from .20 to 1.00

Spline Weights.

Spline Weights, with Brass Finger, ...	Net,	.85
Spline Weights, without Finger, ...	"	.50

APPENDIX.

French Palette Knives,

With very flexible and delicate Points for Impasting.

No. 688.	Ebonized Handle, Blade 7 inches long,	.75
	" " 8 "	.88

15 other patterns of various shapes, each from . . . .75 to 1.50

Canvases on Thin Stretchers, for Sketches and Studies.

Exceedingly light and convenient for out-door sketching.

No. 689.

10 × 12 inches,	.30	16 × 20 inches,	.55
10 × 14 "	.33	16 × 22 "	.55
10 × 16 "	.35	16 × 24 "	.60
12 × 16 "	.40	17 × 21 "	.63
12 × 18 "	.43	18 × 24 "	.75
12 × 20 "	.45	18 × 26 "	.75
14 × 16 "	.45	18 × 30 "	.80
14 × 18 "	.50	20 × 27 "	.80
14 × 20 "	.50	22 × 27 "	.85
14 × 24 "	.53	20 × 30 "	.85

American Academy Boards and Paper for Oil Painting.

No. 690.	Devoe's, 18½ × 24½ inches,	per sheet,	.33
No. 691.	Frost & Adams', 18½ × 24½ inches,	per sheet,	.25
No. 692.	Sketching Paper, 20 × 27 inches,	per sheet,	15
No. 692½.	Sketching Board, 12½ × 19½ inches,	"	.10

Frost & Adams' Landseer's Bristle Brushes.

No. 693. Nos. 1 to 6, each from . . . . . .10 to .15

Frost & Adams' Bright's Bristle Brushes.

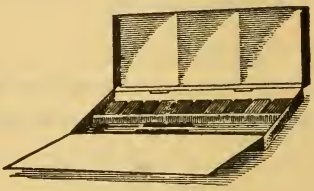
No. 694. Nos. 1 to 6, each from . . . . . .10 to 15

Oils, &c.

In 2 oz. Bottles. (See page 41.)

No. 695.	Tucker's Drying Oil,	.20
No. 696.	Tucker's Siccatif,	.20
No. 697.	Winsor & Newton's Japan Gold Size,	.25
No. 698.	Winsor & Newton's Amber Varnish,	.75
No. 699.	Winsor & Newton's Brown Spirits Varnish,	.40
No. 700.	Winsor & Newton's White Spirits Varnish,	.40

English Moist Water Color Boxes.



MOIST WATER COLOR BOX.

No. 701. Box of Moist Water Colors, Japanned Tin with Thumb-Hole, Hinged Lid and Palette Flap, fitted according to the formula recommended by the Department of Science and Art, consisting of the following colors: Gamboge, Yellow Ochre, Vermilion, Light Red, Burnt Sienna, Sepia, Ultramarine, Lake, Vandyke Brown, Prussian Blue, with three Camel Hair Brushes, ...45

Drawing Books, &c.

No. 702.	Size 7½ × 9½ inches, Best German, White Drawing Paper, Interleaved with Tissue Paper; Black, Pebbled Paper Cover,	.25
No. 703.	Same as No. 702, size 9 × 12 inches,	.35
No. 704.	Same as No. 702 without Tissue Paper, size 7¼ × 10¾ inches,	.20
No. 705.	Same as No. 704, Manila Covers, size 7¼ × 10¾ inches,	.15
No. 706.	Size 7¾ × 8 inches, Smooth Paper for Geometrical Drawing, Manila Cover,	.10
No. 707.	Size 9½ × 13½ inches, Harding's Thin Drawing Paper; Black, Pebbled Paper Cover,	.75

No. 708. Size, 5½ × 8½ inches. Manila Note or Sketch Book, 144 Leaves, Stiff Cover, ... 25

No. 709. Size 4½ × 7½ inches, Teacher's Note Book, Ruled in Cross Sections, ...50

Blocks for Pencil or Water Color Drawing and Painting.

No. 710. 7 × 10 inches. Harding's Thin Paper, Rough or Smooth Surface, 75

No. 711. Same as No. 710, 10 × 14 inches, ... $1.50

No. 712. Same as No. 710, 15 × 22 inches, ... $2.75

No. 713. 7 × 10 inches, Harding's Thick Paper, . . . $1.15

No. 714. 10 × 14 inches, Harding's Thick Paper, . . . $2.50

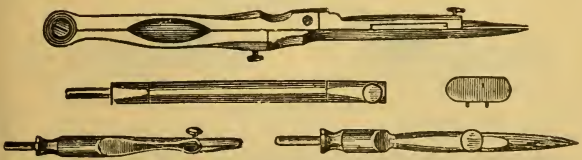
No. 715. 15 × 22 inches, Harding's Thick Paper, . . . $4.75

Davidson's Velvet Rubber.

No. 716. Oblong Cakes, each from . . . . . .05 to 15

Drawing Instruments for Schools.

German Silver, Nickel Plated.



"BOSTON SCHOOL SET."

No. 717. Dividers 5 inches long, Needle Points, Pen and Pencil Points and Lengthening Bar, Steel Joints, ... $2.25

No. 718. Same as No. 717, Plain Joints, ... $1 50

No. 719. Dividers 5 inches long, Needle Points, Pencil Point and Lengthening Bar, Steel Joints, ... $2.00

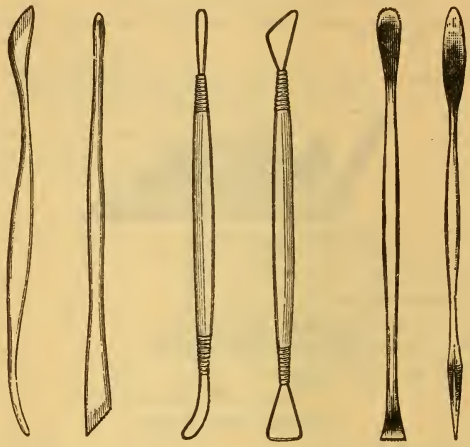
No. 720. Same as No. 719, Plain Joints, ... $1.30

No. 721. Dividers 5 inches long, Needle Points, Pencil Point, Steel Joints, $1.75

No. 722. Same as No. 721, Plain Joints, ... $1.10

No. 723. Brass Dividers 4½ inches long, Pencil Point, ...35

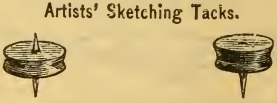
Modeling Tools for Wax, Clay or Plaster.



724. 725. 726.

No. 724. Boxwood, 4 to 12 inches long, assorted patterns, ...10 to .40
No. 725. Wire, 4 to 12 inches long, assorted patterns, ...40 to .80
No. 726. Steel, 6 to 7 inches long, assorted patterns, ...35

Artists' Sketching Tacks.



No. 727. Double Pointed, ... per doz., .55
No. 728. Single Pointed, ... per doz., .45
No. 729. Clamp, with Handle, ...75

NOTE.—By the aid of this Clamp, two canvases are placed face to face (being separated by the "Artists' Sketching Tacks,") are held firmly, and can be conveniently carried by the Artist in going to or from his work.

Convex Glasses, Used in Photographic Painting.

No. 730. Card Size, Oval, 2⅜ × 3½ inches, ... per doz., .20
No. 731. Card Size, Square (Round Corners), 2⅜ × 3⅞ inches, per doz., .20
No. 732. Half Cabinet, Oval, 4 × 5½ inches, ... per doz., .40
No. 733. Half Cabinet, Square (Round Corners), 4⅛ × 5½ inches, per doz., .40
No. 734. Cabinet, Oval, 4¼ × 6¼ inches, ... per doz., .50
No. 735. Cabinet, Square (Round Corners), 4¼ × 6¼ inches, per doz., .50

6½ × 8½ inches,	per doz., $1.50	10 × 12 inches, .	per doz., $6.00
8 × 10 "	" 2.50	12 × 14 " .	" 9.00

F. Soennecken's System of Round Writing.

No. 736.	Text Book for self-instruction, including 25 assorted pens,	$1.00
	" " without pens,	.65
	" " bound in cloth, with 25 pens,	1.60
	Copy Book without instructions (School edition), including 25 assorted pens,	.70
	Copy Book without instructions (School edition), without pens,	.35
	Pens, single pointed, 8 widths; No. 1, 2, 2½, 3, 3½, 4, 5, 6, BBB BB B M MF F FF FFF per gro.,	1.10
	" ¼ "	.35
	Pens, double pointed, 3 widths: No. 10, 20, 30, B M F per box, ¼ gross,	1.00
	" dozen,	.50
	Sample assortment of single and double pens, 25 in a box,	.35

Round Writing

is an accomplishment desirable for every Scholar, whatever profession he may follow. Engineers, Architects and Draughtsmen will use it for titles and lettering on drawings. Headings in books, on policies, contracts, leases, etc., are distinct and ornamental when written in this style.

NOTE.—The new System of ornamental writing, called Round Writing, lately introduced in this country, has met with an unexpected and flattering success, although the copies furnished for instruction and exercise were written in German. A new edition in English is now published under the following titles:

A.—Handbook for Self-instruction and Exercise.

B.—Copybook for Instruction in Schools.

The handbook is a carefully written guide to the whole system; how to form the letters and to avoid mistakes; including 28 pages of finely lithographed plates, with numbers, alphabets, etc., for exercise. The copybook for schools contains the 28 plates for exercise only, reserving the necessary explanation for the teacher.

Round Writing Pens,

Single and Double Points,

Are especially invented and made for this kind of script, with which it can be *written as rapidly as common handwriting.*

NOTE.—We advise all who wish to acquire perfection in this new style of writing to buy the Book for Self-instruction if there is no competent teacher. The use of the pens without the proper guide will discourage the beginner.

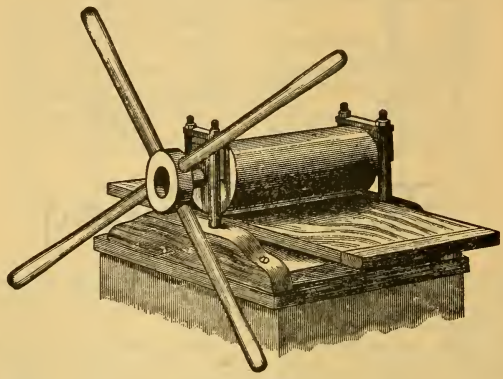
Soennecken's Fluent Writing Pens,

(Constructed on the principle of the Round Writing pens), have the following important features. 1—*The pen requires no pressure*, and, therefore, writes easier and more rapidly than other pens. 2—The above peculiarity and the shape of the points *prevent scratching* entirely, even on rough paper. 3—They give the writing the appearance of *uniformity and steadiness* not equalled with other pens. 4—Requiring no pressure, they wear slightly, outlast others, and are thus *cheaper*.

No. 737.	6 Nos., per gro., $1.10; ¼ gro., .35. Sample box, 25 pens, assorted,	.25

Frost & Adams Co's

Etchers' and Engravers' Materials.



ETCHING PRESS.

No. 738.

	Each.	Per Doz.
Tracing Points, in Wood, Nos. 1-6,	.20	$2.00
Etching Points or Engraver's markers—Double Points,	.30	3.00
Gravers, square and lozenge, various shapes, Seller's make,	.15	1.50
Gravers, Tint tools, various shapes, Seller's make,	.20	2.00
Graver Handles, plain,	.08	.80
" " Rosewood,	.12	1.25
" " long, with two German Silver Ferrules,	.50	
" " long, with two German Silver Ferrules, Seller's make,	1.75	
Scrapers, plain, 3 to 4,	.40	
" concave,	.60	
" " in handles, Seller's make,	1.75	
Burnishers, oval, ebony handles, 2½ inches,	.50	
" " " broad,	1.25	
" " large, 3 in., polished handles, Seller's make,	1.75	
Hand Vises, with wooden handles,	1.00	
Arkansas Oil Stones, in Mahogany cases,	1.00	
Emery Paper, No. 000 finest to No. 4,	.05	.50
Gelatine,—white, medium thick, 17×21, per sheet,	.45	
Nitric Acid, chemically pure, per bottle,	.50	
Chloroform, "	.50	
Etching Ground, best for Summer or Winter use, per ball,	.50	
Liquid Ground, per bottle,	.25	
Stopping-out-Varnish, "	.25	
Wax for walling,	per roll,	.25
Dabbers, covered with finest silk for Ground Laying,	each,	.40
Dabbers for charging the Plate with the Ink,	"	.25

Rubber Rollers for Ground Laying in Rebiting,

	1½	2¾	4
Each,	$2.00	$2.50	$3.00

Roulettes, assorted, from 3 to 6 rows of teeth,	each,	$1.75
Dotting Wheels, assorted,	"	2.00
Rockers, 2½ inches wide, of 56, 64, 72, 90, 105 and 120 teeth to the inch,	per inch,	4.00

Agate Ware Pans for Biting the Plates,

	5×7	7×9	8×10	10×12	11×14	14×17	15×19
Each,	.44	.66	.82	$1.32	$2.16	$5.10	$6.28

English Porcelain Pans,

	7×9	8×10	10×12	11×14	14×17	15×19
Each,	.60	.75	$1.20	$1.95	$4.50	5.60

Pads for Engravers, filled, 5, 6, 7 and 8 inches,	each, .50, .60, .70, .80	
Printing Ink, black, in ½ and 1 pound cans,	per lb.,	2.00
Printing Ink for Tinting, Burnt Sienna, Burnt Umber, Vandyke Brown,	"	2.00
Printers' Varnish or Plate Oil, No. 0, thin,	per lb.,	.50
" " " " 1, medium,	"	.60
" " " " 3, strong,	"	.70
Fast Dryer,	per bottle,	.25

	Per Sheet.	Per Quire.
Holland Plate Paper, Demy, 15½×20,	.07	$1.20
" " " Medium, 17×21½,	.08	1.40
" " " Royal, 19×24,	.12	2.00
" " " Imperial, 21×28½,	.16	3.25
" " " Columbier, 24½×36,	.30	6.00
" " " Double Elephant, 27½×41,	.45	10.25
Ross Stippled Board,	.40	9.50

Japanese and Chinese Papers in large variety.

Cloth for wiping the plates,	per yd.,	.10
Blankets for Printing, of size to fit the Press, two thin and one thick one,	per set,	3.50
Etching Presses, strongly built to answer all requirements, with Roller 10 inches long (as per cut on preceding page),	each,	17.50
Etcher's Guide, by Thomas Bishop, with illustrations, cloth bound,		1.00
Etcher's Hand-book, by Ph. Gilbert Hamerton, with illustrations, cloth bound,		2.25
A Treatise on Etching, by Maxime Lalane, with illustrations, cloth bound,		3.50
Boxes fitted complete with the most necessary Materials for Etching,	at	

Copper Plates, size 2⅜×3¾ in.,	each,	.15
" " " 2¾×4¼ in.,	"	.25
" " " 3×4 in.,	"	.25
" " " 3×4½ in.,	"	.30
" " " 3¼×5 in.,	"	.35
" " " 3¾×5¼ in.	"	.40
" " " 4⅛×5¼ in.,	"	.45

Copper Plates, larger sizes: 3×6, 4×6, 4½×6, 4×8, 5×6, 5×6½, 5×7, 5×7½ 5½×7, 6×8, 6×9, 5×10, 7×9, 7½×10, and all other sizes between these at 2½ cents per square inch.

Copper Plates, sizes above 7½×10, are made to order of thicker plates, at 3¼ cents per square inch.

Zinc Plates, made to order, 1-16 inch thick, up to 7×10 in. at 2½ cents per square inch.

Zinc Plates, made to order, ⅛ inch thick, up to 12×15 in. at 3¼ cents per square inch.

Zinc Plates, made to order, ⅛ inch thick, larger than 12×15 in., at 4 cents per square inch.

STEEL PLATES, ALL SIZES, MADE TO ORDER.

Russell's Canvas Boards.

No. 739.

Something new and very desirable for Sketching in Oil.

4 × 6, . .10	9 × 13, . .35	12 × 16, . .40	14 × 24, . .65
4 × 8, . .12	9 × 15, . .35	12 × 18, . .45	14 × 26, . .70
6 × 8, . .15	9 × 18, . .40	12 × 20, . .50	14 × 28, . .75
6 × 10, . .20	10 × 12, . .35	12 × 22, . .50	16 × 20, . .65
6 × 12, . .20	10 × 14, . .35	12 × 24, . .50	16 × 22, . .70
8 × 10, . .25	10 × 16, . .35	14 × 16, . .45	16 × 24, . .75
8 × 12, . .30	10 × 18, . .40	14 × 18, . .50	16 × 26, . .80
8 × 14, . .30	10 × 20, . .40	14 × 20, . .50	18 × 22, . .80
8 × 16, . .35	12 × 14, . .35	14 × 22, . .60	18 × 24, . 1.00
9 × 11, . .30			

Papier Mache Plaques.

No. 740.

ROUND.	6 in.	7 in.	8½ in.	10 in.	12 in.	14 in.	16 in.
Plain,	.15	.20	.25	.30	.40	.50	.60
Japanned,	40	.50	.60	.75	.90	1.00	1.10
Gilt or Silvered,	.70	.75	.80	.85	1.25	1.63	1.75
Gold Edge,	.80	.85	1.00	1.10	1.50	1.68	1.90
Japanned, Gold Edge,	1.00	1.10	1.25	1.35	1.68	1.75	2.00
Pastel,		.40 (8 in.)		.55	.75	1.00	1.15

OVAL.	10 in.	11 in.	13 in.	15 in.
Plain,	.50	.55	.75	.95
Japanned,	.60	.75	.90	1.25
Gilt and Silvered,	.90	1.00	1.35	1.75
Gold Edge,	1.00	1.25	1.50	1.90
Japanned, Gold Edge,	1.25	1.50	1.75	2.00

Dull Ebonized Plaques at the same price as Japanned

Porcelain Plaques.

No. 741.

5 inch, . .20	8 inch, . .40	11 inch, . .70	15 inch, . $1.50
6 " . .30	9 " . .50	12 " . .75	16 " . 1.75
7 " . .35	10 " . .60	14 " . .90	

Porcelain Panels.

No. 742.

3¼ × 4¼ in. .20	4¼ × 6¼ in. .60	6½ × 8½ in. $1.00	6 × 10 in. $1.50
4¼ × 5½ " .40	3¼ × 8½ " .60	4 × 10 " 1.00	5 × 12 " 1.50
	4 × 8 " .80	5 × 10 " 1.00	

Thin Porcelain Plaques.

No. 742½.

Round or Oval.

3 inch, ...40	5 inch, ...75	7 inch, . . . $1.15
4 " 50	6 " . . . 1.00	8 " . . . 1.25

China Plaques.

No. 743.

Glazed and Unglazed.

9 in., . .50	12 in., . .85	14 in., . $1.50	16 in., . $3.00
10 " . .65			

Minton's China Tiles.

All net.

No. 744.

3 × 3 White, .08	4 × 6 White, .20	3 × 6 Cream, .12	6 × 6 Sage, .25
4 × 4 " .12	4 × 8 " .25	6 × 6 Pearl	8 × 8 Red, .50
5 × 5 " .15	4 × 4 Cream, .12	Blue, .25	6 in. Round
6 × 6 " .20	5 × 5 " .15	6 × 6 Celadon, .25	White, .20
7 × 7 " .35	6 × 6 " .20	8 × 8 Celadon, .60	6 in. Round
8 × 8 " .45	7 × 7 " .35	6 × 6 Blue, .25	Black, .25
3 × 6. " .12	8 × 8 " .45		

Haviland China Placques.

No. 745.

6½ inches,	.	.45	9½ inches,	.	$1.00	12 inches,	. $3.00
7½ "	.	.63	10 "	.	1.50	13 "	. 3.50
8 "	.	.75	11 "	.	1.75	14 "	. 5.00

Pottery Placques.

Red.

No. 746.

6 inch,	.	.25	9 inch,	.	.45	12 inch,	. .75
8 "	.	.35	10 "	.	.50	14 "	. 1.00
16 inch,	$1.40						
20 "	2.00						

Tambourines.

No. 749.

5½ inch, Sheep-skin head,	.20	10 inch, Calf-skin head,	. .65
8 " "	. .45	12 " "	. . .90
10 " "	. .50	8 " " nickel rim,	1.15
12 " "	. .65	10 " " "	1.45
5½ inch, Calf-skin head,	. .35	12 " " "	1.65
8 " " "	. .55		

Mirrors in Broad Wooden Frames for Decorating.

No. 750.

Size.	Pine. The Glass Set Square.	Chestnut, Ash or Oak The Glass Set Square.	Chestnut, Ash or Oak The Glass Set Diamond.	Ebonized. The Glass Set Square.	Ebonized. The Glass Set Diamond.
4 × 4, . .	$1.35	$1.50	$1.75	$2.40	$2.55
6 × 6, . .	1.50	1.75	2.00	2.75	3.00
8 × 8, . .	2.00	2.25	2.50	3.50	3.75
10 × 10, . .	3.00	3.25	3.50	4.50	4.75
12 × 12, . .	4.00	4.50	4.75	5.50	5.75
14 × 14, . .	5.25	5.75	6.00	7.15	7.50
16 × 16, . .	6.50	7.50	7.75	9.00	9.25
18 × 18, .	8.50	9.25	9.50	10.50	10.75

Mirrors in Birds-eye Maple-wood Frames, square or diamond set. Also odd sizes furnished to order. The plain wooden frames gilded to order.

Japanned Water Color Boxes.

For Tube Water Color.

No. 751.

For 10 Tubes,	.	each,	$2.75	For 20 tubes,	.	each,	$4.00
" 12 "	.	"	3.00	" 24 "	.	"	4.50
" 15 "	.	"	3 40	" 30 "	.	"	6.00

L. L. Brown's Hand-made Imitation of Whatman's Paper.

Cold Pressed, Rough and Hot Pressed.

No. 752.

	Per quire.	Per sheet.
72 lb. Imperial,	$2.25	.12
90 lb. "	3.50	.18
140 lb. "	5.00	.25

L. L. Brown's Linen Record or Ledger Paper.

No. 752⅛.

Royal,	per quire,	$1.25
Imperial,	"	2.00
Double Elephant,	"	3.50

Weston's Linen Record or Ledger Paper.

No. 752¼.

Royal,	per quire,	Net,	$1.50
Imperial,	"	"	2.00
Double Elephant,	"	"	3.50

Sketch Blocks of L. L. Brown's Hand-made Water Color Paper. Same Texture as Whatman's.

72 lb. Paper.

No. 752⅜.

4½ × 5½ inches,	.35	7 × 10	inches,	.60	12 × 18	inches,	$1.75
5 × 7 "	.40	9 × 11½	"	1.00	14 × 20	"	2.00
5½ × 9 "	.50	10 × 14	"	1.10			

Same as Above. 90 lb. Paper.

No. 752½.

4½ × 5½ inches,	.40	7 × 10	inches,	.80	12 × 18	inches,	$2.25
5 × 7 "	.50	9 × 11½	"	1.10	14 × 20	"	2.75
5½ × 9 "	.55	10 × 14	"	1.50			

Same as Above. 140 lb. Paper.

No. 752¾.

4½ × 5½ inches,	.50	7 × 10	inches,	$1.25	12 × 18	inches,	$3.75
5 × 7 "	.70	9 × 11½	"	2.00	14 × 20	"	4.25
5½ × 9 "	1.00	10 × 14	"	2.25			

Sketch Books of Charcoal Paper, Bound in Full Linen Covers.

French Style.

No. 753.

No. 1, .40 No. 2, .50 No. 3, .55 No. 4, .65 No. 5, .90

Sketch Books for Pencil, Full Cloth.

Cheap.

No. 754.

No. 1, .20 No. 2, .25 No. 3, .30 No. 4, .35 No. 5, .45

Solid Sketch Blocks. Whatman's 72 lb. Paper.

No. 755.

4½ × 5½ inches,	.35	5 × 8 inches,	.50	9 × 11½ inches,	$1.00
5 × 7 "	.40	5½ × 9 "	.50	10 × 14 "	1.35
		7 × 10 "	.70	14 × 20 "	2.50

Solid Sketch Blocks, made of German Paper, for Pencil.

No. 756.

4½ × 7 inches,	.20	6 × 9 inches,	.30	9 × 11 inches,	.65
5 × 8 "	.25	7 × 10 "	.40	10 × 14 "	.75

Architects' Certificate Books.

No. 756⅛.

100 Receipts, ...75 | 200 Receipts, ... $1 25

Architects' Contract Books.

No. 756¼.

Bound, 50 pages, 8½ × 14, ... $3.50

Architects' Time Receipts.

No. 756⅜.

50 on a Block, ...30 | 100 on a Block, ...50

Architects' Agreements, Specifications, Etc.

No. 756½.

Architects' Agreements,	. . . . .	each,	.05
" Specifications,	. . . . .	"	.30
" Uniform Contracts,	. . . . .	"	.05

Enamel Cloth for Architects.

To be used to cover and protect Plans and Tracings.

No. 756⅝.

54 inches wide, ... per yard, .40

Frost & Adams' Sketch Books.

Cloth Sides, Leather Back and Corners, or Full Linen Covers, made from Whatman's Paper or English Crayon Paper.

No. 757.	No. 1.	Size 3¾ × 5¾ inches,	.60
	No. 2.	" 4½ × 6¾ "	.70
	No. 3.	" 4½ × 7⅞ "	.80
	No. 4.	" 5¾ × 8⅞ "	.90
	No. 5.	" 7 × 11 "	1.25

American Sketching Umbrellas.

Made by Frost & Adams.

No. 758.

31 in., with plain staff, . . $5.50 | 33 in., with plain staff, . . $6.50
37 in., with plain staff, . . $7.50

We would call your special attention to these Umbrellas, as they are a first-class article, and are sold at a very low price.

SKETCHING STAFF, ... $1.25

Sketching Staff, Jointed, ... 2.00

This is a new device for holding a common umbrella and will be found very convenient.

Ladies' Light Sketching Umbrella, ... 6.00

French Bristle Brushes, White Handles.

Round and Flat.

No. 759.

Assorted, 1 to 20, ... each, .10 to .25
" 1 to 12, ... per doz. .75

The bristles in the above are of superior quality.

Rosa Bonheur's long-handled French Bristle Brush, a superior article, Handles 20 inches long, ... each, .15; per doz., 1.50

German Bristle Brushes, in Yellow Handles.

No. 760.

Assorted, 1 to 12, ...10 to .15
1 to 12, white handles, ... per doz. .75

Claude Lorraine Glasses.

No. 761.

For giving by reflection a miniature presentation of any object one desires to draw or paint.

Black Diminishing Glasses, in Morocco Cases.

4 × 5 inches,	$4.50	5 × 7 inches,	$6.75	7 × 8½ inches,	$10.00
5 × 6 "	5.75	6 × 7 "	8.00	7 × 9 "	11.00
		6 × 8 "	9.00		

Frost & Adams' Ebonizing Preparation,

For Ebonizing Woods, Etc.

No. 762.

4 ounce wide mouth Bottle, ... each, .25
8 " " . . . . . " .40
Surfacing Finish, in 4 ounce Bottles, ... " .25

Give the surface one coat of Ebonizing Preparation and when dry one or more coats of surface finish according to finish desired

New Works on Drawing.

"TREE DRAWING," in Two Parts,

AND

"BLOCKING OUT," in Two Parts,

BY B. F. NUTTING.

No. 763.

The first consists of exercises for acquiring the "touch," or mechanical expertness necessary not only in drawing trees from nature, but in making copies from lithographs or photographs. With these exercises examples are given, with directions for commencing, proceeding with, and finishing a tree.

The second consists of various examples for copying, with the "blocking out" in different stages attached. Its object is to start beginners in a right direction, and to correct in others the influence of bad methods. Teachers who use the blackboard will find this work very helpful.

Tree Drawing, each part, ...	.25
Blocking Out, "	.25

Blocking Out, Second Series.

"Seven Etched Plates," by B. F. Nutting.

This work, with the first series published by us is made as nearly self teaching as possible, and the faithful use of it will save expense for lessons by efficiently supplementing the work of a good teacher. Also being the method of the *best masters* and the *best schools*. It is the very best preparation for advanced study, whether in Drawing, Painting or Sculpture, as those have found who having commenced with it have afterwards studied abroad or with masters at home.

This, with the first series, is endorsed by the best artists.

Price, ... 75

Free-hand Drawing, Light and Shade, and Free-hand Perspective.

For the use of Art Teachers and Students and Teachers of Drawing in the Public Schools

By ANSON K. CROSS,

Instructor in the Massachusetts Normal Art School and the School of Drawing and Painting, Museum of Fine Arts, Boston.

ENDORSED BY LEADING ART TEACHER.

It is by far the most valuable contribution to the discussion of that phase of the study of drawing which is of most direct interest to the great body of teachers of elementary work.

I wish it could be put into the hands of every public school teacher in the land who has these problems to face, and only the stupid and mechanical formulas of the "system" makers to guide her.

I am heartily in accord with the spirit and purpose of the book and the methods it inculcates, and trust it may have the influence it deserves. L. W. MILLER.
Principal Penn. Museum and School of Industrial Art, Philadelphia, Pa.

Price, $1.50. Sent by mail, post-paid, on receipt of price.

Prang's Water Colors.

For Children, and for Schools and Amateurs.

We have the pleasure of announcing that we have ready a superior line of Water Colors for children, and also for Schools and Amateur work.

These Colors are made for us in Germany by Mr. Gunther Wagner, the leading manufacturer of Fine Water Colors in Europe, and they have been especially prepared for the American market by Mr. Wagner, under the direction of Mr. Prang. They are very attractively put up on handsomely decorated tin Palettes, and in beautiful tin Boxes.

Non-Poisonous Colors for Children.

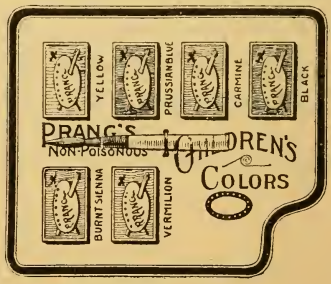
There has long been desired in this market a line of Children's Colors, conforming as closely as possible to the standards of the leading Colors, and which should, at the same time, be entirely NON-POISONOUS, as children are apt to put the colors or the brushes in their mouths. All children delight in the use of Colors, and as the appreciation of art work grows among our people, it is growing more and more apparent that children in their youngest years, and even to play with, should have reliable Colors, in order that their color taste be not misdirected.

We guarantee these Children's Colors to be free from all poisonous substances. They may be placed in the hands of children without the slighest fear of danger. At the same time they are rich in tone, and so soft that they will flow from the cakes with the slightest touch of water.

There are two qualities of these Children's Colors,—the PALATTE COLORS, the lowest quality, with Palette design; and the EAGLE COLORS, a better quality, with Eagle design.

Prang's Palette Colors.

These Colors are put up on a beautiful tin Palette, with a fine camel's-hair brush on each Palette.



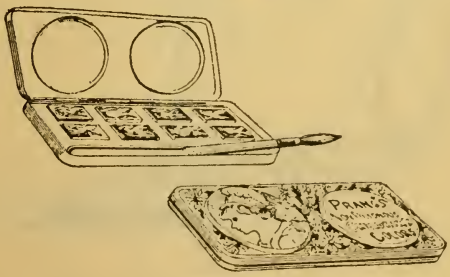
Palette A.
152⅛

Palette B.

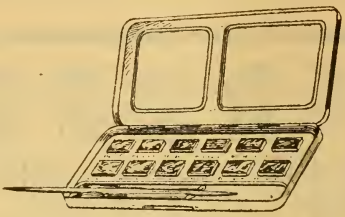
	Each.	Per dozen.
Palette A, containing six colors, with brush,	.10	$1.00
Palette B, containing nine colors, with brush,	.15	1.50

Prang's Eagle Colors.

These Colors will be a delight to the children. They are put up in durable and very handsomely decorated tin Boxes. Each Box contains a fine camel's-hair brush, with directions for mixing Colors to produce other Colors and Shades.



Box No. 2.



Box No. 4.

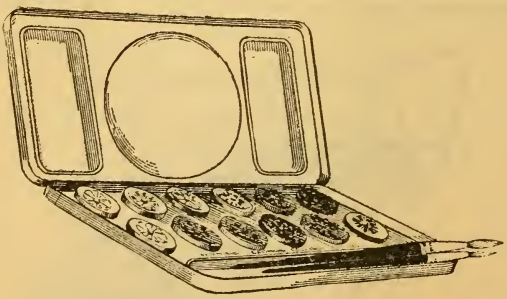
	Each.	Per dozen
Box No. 2, containing eight colors and brush, . . .	.25	$3.00
Box No. 4, containing twelve colors and two brushes,	.40	4.50

Prang's Fine Water Colors.

For School and Amateur Work.

These Colors are intended for serious educational work, and not for children: hence some of the colors cannot be produced of the proper quality without using poisonous ingredients. In this respect, however, these colors are no more objectionable than any other brand of colors used. In strength and purity of color, in freeness in flowing and in mixing, these colors are unrivalled by any other Box colors in the market. The whole get-up of these Colors and Boxes is very attractive.

Each box contains two fine camel's-hair brushes, with directions for mixing Colors to produce other Colors and Shades.



Box No. 13.

	Each.	Per dozen.
Box No. 13, containing twelve colors and two brushes,	.75	9.00

Prang's Outline Pictures.

With Directions for Coloring.

The handling of brush and color is one of the greatest pastimes with children, and as this furnishes instructive amusement, it should be made available in the best form.

Instruction which the child enjoys is entered into eagerly, going far to make accomplishment easy and rapid. Therefore, instruction in the form of amusement is one of the best methods with children, since by it the child is drawn of its own volition.

Our aim is to assist parents and teachers to extract education from this pastime, for, with proper guidance, this simple amusement may be made fruitful in benefit for life.

If wisely directed, two ends may be attained:

First: A knowledge of the right use and combination of colors.

Second: The cultivation of artistic taste.

Our Outline Pictures for Painting, by leading artists, will place in the hands of parents really artistic designs, with simple arrangements of color, by means of which, from the first step, the child will lay the foundation of a true artistic perception.

It is intended to include in these issues a variety of figures, animals, landscapes, flower-pieces and decorative work.

Even children of a larger growth will derive not a little pleasure and profit from the study of these outlines.

Put up uniformly, in attractive portfolios, size $7 \times 9\frac{1}{2}$ inches, each containing nine pictures, including one colored as an example, with directions for coloring.

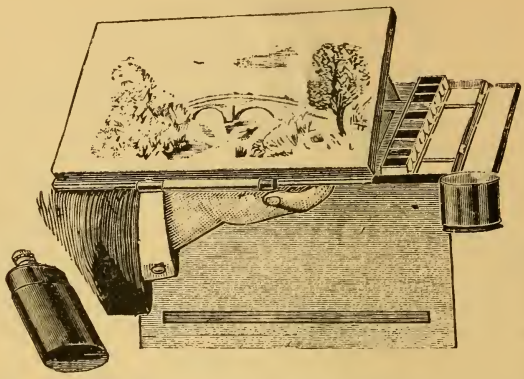
Price per Portfolio, ...25

The following series are now ready:

No. 1. Children (Single Figures).
No. 2. Children (Groups).
No. 3. Flowers.
No. 4 Children.
No. 5. Farm Scenes.
No. 6. Children at work.
No. 7. Children at play.
No. 8. Kind Children.
No. 9. Figures from Mother Goose.

No. 10 Our Pilgrim Forefathers.

Others in preparatiion.



Color Box Sketch Block No. 2

is a development on a larger scale of the pattern introduced last season. The original pattern was designed to combine in a very compact and portable arrangement all the materials necessary for making water color sketches. Although the block was only 7 inches by 5 inches, and with diminutive pans of water colors, it was received with much favor by the profession; many artists, however, have asked that the same arrangement be made with a larger Sketch Block. It has been thought advisable to somewhat modify the pattern when introducing the larger article.

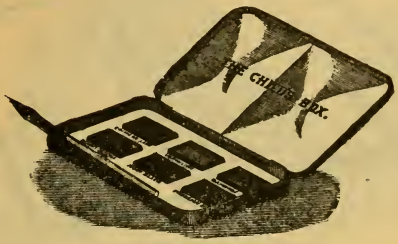
The Color Sketch Block, No. 2, consists of a Whatman Block, 10 inches by 7 inches, bound in canvas, with elastic band, and containing a goose-quill sable brush, a good pencil and piece of rubber. There is also a pocket for detached sketches. A japanned color box is attached to the end of the Block, containing 10 half pans of Reeves' Artists' Water Colors, namely: — Aureolin, Yellow Ochre, Raw Sienna, Light Red, Permanent Crimson, Rose Madder, Cobalt, Prussian Blue, Vandyke Brown and Sepia — held in their places by patent spring clips. A japanned palette slides into the binding when the arrangement is closed and takes up no extra space; when in use, the palette is drawn out and the lid of the box also forms a palette of sufficient depth for large washes.

The Block can be held in a sloping position while the box and palette are horizontal, as is well shown in the engraving. An oval water bottle and cup are included, the cup being attachable to the palette. The whole appliance is held on the thumb and is not heavy.

Price complete, ... $8.50

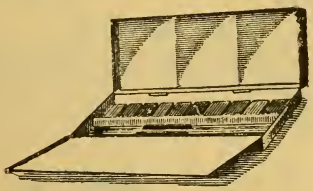
Japanned Tin Boxes with Moist Colors.

With Hinged Lid (palette flaps).



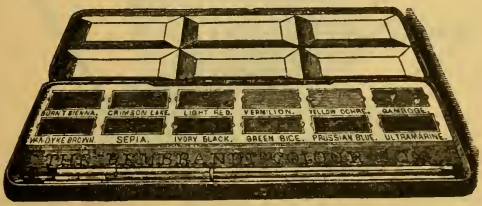
THE "CHILD'S" BOX.

No. 766. Contains one flap palette, for mixing tints, 6 Pans of choice Moist Water Colors, 1 Camel's Hair Brush, . . . Retail, .25



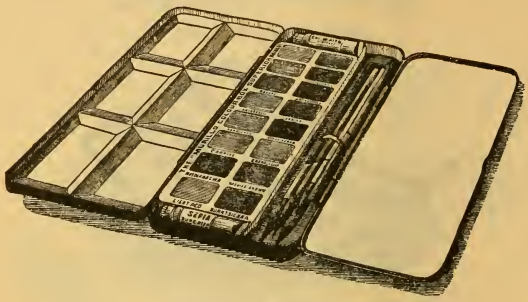
ROWNEY'S SCHOOL OF ART BOX.

No. 767. Has two flap palettes, for mixing tints, 10 Pans of choice Moist Water Colors, 3 Camel's Hair Brushes, . . Retail, .45



THE "REMBRANDT" BOX.

No. 768. Has six wells in the cover, for mixing tints, 12 Metal Pans of choice Moist Water Colors, 3 Camel's Hair Brushes, . Retail, .50



THE LARGE "MURILLO" BOX.

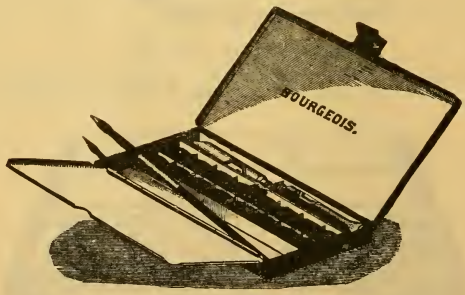
No. 769. Has six wells in the cover, for holding tints, 1 flap palette, for mixing tints, 16 Pans of superior Moist Water Colors, 1 Tube of Moist Chinese White, 1 Tube of Moist Sepia, 4 Camel's Hair Brushes. . . . . Retail, $1.25

THE SMALL "MURILLO" BOX.

No. 770. Is the same as above, with 12 Pans of superior Moist Water Colors, 1 Tube of Moist Chinese White, 1 Tube of Moist Sepia, 3 Camel's Hair Brushes. . . . . Retail, $1.00

Half Pans of all Colors, to replace those used from No. 769 and No. 770:

Common Colors, . each, .06 | Extra Colors, . . . each, .10

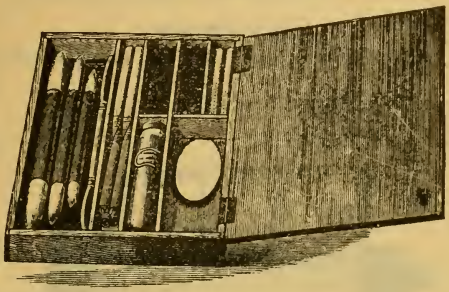


THE EXTRA FINE "BOURGEOIS" BOX.

No. 771. Has two flap palettes, for mixing tints, 16 Pans of Extra Fine Moist Water Colors, 1 Tube of Moist Blanc d'Argent, 1 Tube of Moist Blanc Fixe, 2 Camel's Hair Brushes, . . Retail, $2.75

New Palette Chalk Box,

For Students, Schools of Art, etc;



The Lid of this Box is covered inside with Chamois Leather for Stumping, and the thumb-hole is so arranged as to allow of the Box being held on the hand as comfortably as a Palette.

No. 772. The Box contains 4 each Nos. 1, 2 and 3 Square Black Conté Crayons, 2 each Nos. 1 and 2 Lemoine's Round White Crayons, 1 Bottle Stumping Chalk (Sauce Velours), 1 each Nos. 4 and 6 White Paper Stumps, 1 No. 2 White Leather Stump, 4 White Tortillon Stumps, 4 Gray Tortillon Stumps, 1 Brass Portcrayon. Weight, fitted complete, under 8 ounces; or about the same as an ordinary 12-inch Mahogany Palette, . . . Price, $1.25

Japanned Tin Charcoal Sketch Box.

With suitable divisions for holding our Improved Fixateur, bottle Fixatif, one piece Amadou, Charcoal, Crayon Sauce, Porte Crayon, Stump and Thumb Tacks.

No. 773. Empty, size, 10¼ × 5 inches, ... $2.40
Fitted, ... 3.50 to 4.50

Empty Thumb-Hole Boxes.

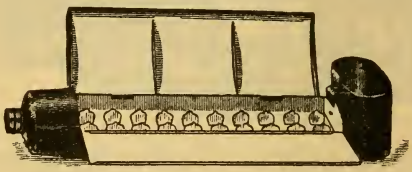
No. 774.
11 Pan Box, . $3.25 | 17 Pan Box, . $4.00 | 21 Pan Box, . $4.25

Empty Palette Boxes.

No. 775.
6 ½ Pans, $1.85 | 8 ½ Pans, $2.10 | 10 ½ Pans, $2.25 | 12 ½ Pans, $2.50

Round Empress Boxes and Bottle Combined.

No. 776.
8 ½ Pans, . . $2.25 | 10 ½ Pans, . . $2.40 | 12 ½ Pans, . . $2.75



Oval Empress Boxes and Bottle Combined.

No. 777.
16 ½ Pans, . . $3.00 | 20 ½ Pans, . . $3.25 | 24 ½ Pans, . . $3.50

Reliance Tracing Cloth,

Is a new article of much heavier material than has ever been placed on the market. This Cloth is peculiarly adapted to tracings that are subjected to a great amount of handling. It is of great strength and durability, and has a perfect surface for both ink and pencil. It is made in four different widths, and is put up in rolls of twenty-four yards each. We would advise our patrons to give it a thorough trial.

No. 778.

30 inches wide, .	per roll, $6.00	40 inches wide, .	per roll, $8.00
37 " " .	" 6.80	43 " " .	" 9.50

Transparent Drawing Parchment and Tracing Papers.

No. 779.	Extra Thick,	in rolls of 10 yards, 39 inches wide,	. . . $4.00
	Medium,	in rolls of 20 yards, 39 inches wide,	. . . 5.25
	Medium,	in rolls of 33 yards, 39 inches wide,	. . . 9.00
	Thin,	in rolls of 20 yards, 39 inches wide,	. . . 5.00

These papers are highly appreciated for their superior and uniform quality, and are unsurpassed for durability and transparency. We warrant them not to become brittle nor to discolor by age.

Our Parchment Papers are very strong, stretch well on the board, erase well, take inks, colors and pencil like ordinary drawing paper, and combine all qualities of drawing and tracing papers.

The extensive use of the Blue Process for copying drawings gives the Parchment drawing papers special value, as Blue Process copies can be taken directly from drawings made on these papers without first making a tracing.

Stippled or Autographic Paper,

For Illustrating.

No. 780. Ross', ... per quire, $9.50; per sheet, .40
McClure and McDonald's, ...60

Rice Paper.

No. 781.

Packages, 3¼ × 3½, per box,	.25	4¾ × 7¼, . . . per sheet,	.15
4¾ × 6¼, . . . per sheet,	.10	7 × 10, . . . "	.30

Ivory Paper.

No. 782.

11 × 15 inches, . per sheet,	.50	15 × 22 inches, . per sheet,	$1.00

Porcelain Paper.

No. 783.

11 × 15 inches, . per sheet,	.45	15 × 22 inches, . per sheet,	.90

Miniature Ivories.

For Oil and Water Color Painting.

No. 784.

No. 0, Size 1¾ × 2⅝	. each,	.35	No. 7, Size 3 × 3¾	. each,	$1.80
1, " 1⅞ × 2⅞	. "	.45	8, " 3¼ × 4¼	. "	2.00
2, " 2⅛ × 2½	. "	.60	9, " 3½ × 4½	. "	2.80
3, " 2¼ × 2¾	. "	.80	10, " 4 × 5	. "	4.00
4, " 2½ × 3	. "	1.10	11, " 4½ × 5¼	. "	5.00
5, " 2⅝ × 3¼	. "	1.25	12, " 4½ × 6	. "	6.50
6, " 2¾ × 3¼	. "	1.60			

Draftsman's Adjustable Curve Ruler.

Patented May 20, 1884. Additional Patents applied for.

This tool is designed to supplement the well-known French Curves, and will be found a most excellent and handy tool, combining every form of curve in one. The working edge is made flexible with a certain amount of spring to it, and will always assume a uniform and perfect curve

It can be instantly adjusted and retained to any form of curve, the retaining power being a strip of pure drawn lead, which is covered by sleeves, and slides between two ribbons of tempered steel.

The working edge is cylindrical in cross section, so that by slightly inclining the pen two or more parallel lines can be drawn without removing the ruler.

This tool is commended by leading architects and draftsmen, and meets a want long felt. It is well made in every part, and neatly finished in nickel plate. Whole length of tool, 14½ inches. Length of working edge, 10 inches.

No. 785. 14½ inches, ... each, Net, $1.87
30 " . . . . . " 2.87
12 inches, Cheaper Construction, . . " .87
24 " " . . " 1.50

Patent Spiral Thumb Tacks.

Nickeled.

No. 786.

No. 1, per doz., . . .	.25	No. 2, per doz., ...	.30

Perfectly safe for the fingers and convenient to drive.

Green's Prepared Tints for Penciling.

These Tints are prepared on stout Drawing Paper for the modern style of Pencil Drawing in Black and White; the White being obtained by scraping the surface of the paper with a knife or eraser.

No. 787.	Imperial, 22 × 30,	per sheet,	.35
	½ Imperial,	"	.20

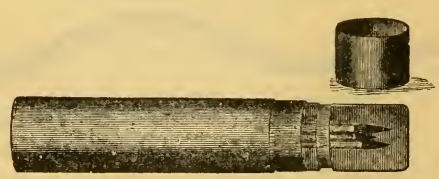
The Adolfi Process.

A Medium for Painting on Silks, Satins, etc., in Oil Colors.

The art of painting in oil on silks, satins and similar materials, has long been sought for, but without success, owing to the want of a process by which the colors used could be rendered supple, and not liable to crack when the goods painted with them were made up into ladies' dresses, curtains, etc. By this invention, the satin, or other material, preserves its suppleness intact; the colors are bright and clean, and have the power of refracting the different tints of the material upon which the picture is painted, thereby producing a novel and beautiful effect. Another merit of this process is that the colors do not become faint or dull by exposure to the air, but seem to gain increased brilliancy after the silks and satins, on which they have been used, have been kept for years.

No. 788. Price per Bottle, ... $1.00

Brush Cases.



JAPANNED-TIN BRUSH CASE.

No. 789.	Japanned Tin, 1½ × 14 inches,	.80
	" " 1⅛ × 7 "	.50
No. 790.	Leather Pouches, for 8 Pencils or Brushes,	$1.00
	" " " 20 " "	1.20
	" " Flat, for 8 Pencils or Brushes,	1.65

Liquid Indelible Drawing Inks.

No. 791.

Black,	.35	Blue,	.40	Scarlet,	.50
Brown,	.40	Green,	.40	Carmine,	.50

Set of one bottle each of above six inks, in neat wooden box, . . $2.25

Whiting's Inks—Etching, Marking, Laundry and Process.

For Etching on Linen.

No. 792.

Etching Ink (with Preparation, Pens and Directions), ... $1.00
Etching Ink, trial size, ...60

[N. B.—Whiting's Indelible Etching Ink is the acknowledged standard—approved by the Decorative Art Societies, and considered the "only ink" for the finest and most artistic work.]

Outline Ink (for use without the Preparation), ...50
Outline Ink, trial size, ...30
Transparent Tracing Box, ... Whitewood, $1.00; Walnut, 1.25
Stretching Block, ...50
Indelible Colored Inks, single colors (as below), ... each, .75
Indelible Colored Inks in Cases (with Etching Pens, Mordant, and full directions.)
Case No. 2, Scarlet and Blue, ... 1.25
Case No. 3, Crimson, Blue, Violet and Green, ... 2.25
Case No. 4, Crimson, Blue, Violet, Brown, Green, Scarlet, with Brush and Penholders, ... 3.00
Whiting's Ebonized Etching Pens, ... per doz., .15
Harrison & Bradbury's Etching Pens, ... " .15
Indelible Laundry Ink, in neat and convenient stands, ...25

Magic Marking Ink, ...60
Magic Marking Ink, trial size, ...40

Polished wooden case contains Ink, Mordant, Smoothing Glass, etc. Can be used with or without first preparing the cloth. Is indelible without heat or sunlight; intensely black, and not faded by washing chemicals, etc. Will outlast the fabric.

New Manual.

A Limited Edition Now Ready.

An Illustrated Book of Special Instructions, giving the fullest directions for all Etching and artistic Marking, with many useful suggestions, hints about drawn work, etc.

"Worth ten times its cost to any one wishing to make 'a profession' of Etching on Linen, Decorative Marking, etc."

No. 793. Price, ... $1.00

For Coloring Photographs, etc.

Transparent Photo. Colors, 10 Bottles, in handsome case, ... $3.00
Half Case (Flesh, Crimson, Blue, Yellow and Brown), ... 1.75

For Architects, Designers, Draughtsmen, etc.

No. 794.

Liquid Process Drawing Ink, indelible and lustreless, ...35

Liquid Indelible Drawing Inks, in stands. (Warranted impervious to water.)

Black, . .25	Green, . .35	Yellow, . .35	Crimson, . .45
Brown, . .35	Purple, . .35	Blue, . . .40	Scarlet, . .45

Complete Case, 8 colors, space for pens, etc., hinged and polished, . . 3.00
Half Case, as above (Black, Brown, Crimson and Blue), . . . 1.50

Full Illustrated Price List sent free to all applicants.
Catalogue of Designs for Etching on Linen.

We have the following Price Lists separate, which are all complete: Repousse Tools and Designs, Materials for Tapestry Painting, Materials for Silk, Plush and Lustra Painting, Brass Plaques, Etc.

LIST OF

Higgins' American Drawing Inks.

BLACK AND COLORED.

The Standard Liquid Drawing Inks of the World.

AMERICAN INDIA INK.—BLACK.

Two kinds, Waterproof and General.

The Waterproof Drawing Ink (white label), is insoluble when dry, and is best for working drawings which have to stand handling, moisture or color washes.

The General Drawing Ink (red label), is soluble, and is best for India Ink tints and washes, for tracings, for patent office and photo drawings, and all fine line work.

Colored Inks, all Water Proof.

Carmine,	Brown,	Vermilion,	
Scarlet,	Yellow,	Indigo,	Blue,
Brick-Red,	Green,	Orange,	Violet.

PRICE LIST.—In small bottles, as per cut, black or colors, ...25
In 8 oz. bottles, black or colors, . . . 2.00
Pints, . . 3.75 | Quarts, . . 7.00
Small bottles by U. S. mail, 10 cents extra.

HIGGINS' SPECIAL WRITING INKS.

Absolutely Black. Absolutely Permanent. Pure Carbon Solutions.

Engrossing Ink—(Label Copyright No. 3033, 1883). A True Black Indestructible Ink, specially adapted for all important writings, records and engrossing, and for fancy penmanship, card writing, etc. Proof to effects of age, air, sunlight, chemicals and fire. It is also waterproof when dry. Price in 2-ounce bottles, 25 cents; in half pints, 75 cents; and in pints, $1.25.

Eternal Ink—(Label Copyright No. 3032, 1883). A fine Carbon Writing Ink for general use. Black when written and eternally remains so. 2-ounce bottles, 15 cents each; half pints, 50 cents; pints 75 cents.

Indelible Laundry Ink—For marking clothing, etc. This is the only Ink that is a TRUE BLACK, that needs NO SUN, HEAT, OR OTHER TREATMENT before or after marking, and that cannot be removed by any chemical. Price 15 cents, in special bottles holding twice the usual quantity.

SPECIALLY PREPARED FRENCH LIQUID CHINESE INK.

For Artists, Architects, Engineers, Surveyors,—For Maps, Pen and Ink Drawing, etc.

This Ink is carefully prepared from the finest brands of Chinese or India Inks, and maintains all the superior qualities for which these Inks are celebrated. It is a rich, deep black, capable of being graduated to the most delicate tints for washes. It will not wash up when once dry, is perfectly free from sediment, and will keep good for any length of time. . . . Per bottle, $ .30
Medium, ...40
Large, ...50

THE LATEST AND MOST IMPROVED ADHESIVE.

TAURINE MUCILAGE.

This new and beautiful Mucilage is made from the best adhesive substance known, and is sold under a guarantee of superiority in all respects, and with the proviso that if not satisfactory its cost will be refunded.

Section of Corked & Brushed Bottle in Wrapper, 2 or 4 oz.

ADVANTAGES:

Great Adhesive power; quick catch and quick drying; no impurity or sediment, but perfectly clean, clear, and transparent; will not corrode brush, and hence will not become dirty and stained in use; will not clog neck of bottle like the common corrosive gum mucilages. Put up in an improved manner, with new brushes, stopper, etc., most convenient and attractive to the purchaser. Packed in our novel method in felt paper wrappers — no dirty sawdust, etc.

PRICE LIST.

2 oz. Bottles with improved Brushes	$ .15
4 oz. " " " "	.25
½-pt. Packages, boxed, with empty stand and brush	.35
Pint Packages. boxed, with empty stand and brush	.60
Quart Packages, boxed, with 2 empty stands and brushes	1.00
Pint Bottles, alone	.50
Quart Bottles, alone	.80
½-Gallon Bottles	1.50
Empty White Glass Stands, 2-oz., with Improved Brush	.08
Empty White Glass Stands, 4-oz., with Improved Brush	.12
Extra Brushes, . 2 oz., 2c.; 4-oz.,	.03

HIGGINS' DRAWING BOARD MUCILAGE.

A Novel Semi-Fluid Adhesive of Great Strength and Body.

This adhesive is recommended for sticking almost everything except wood to wood. For sticking cloth or paper to wood, paper to paper, paper to cloth, or leather to paper or cloth, it is unequalled. It is, therefore, excellent for mounting drawings, maps, or pictures on cloth, paper or wood, or any similar work requiring a quick-acting and powerful adhesive.

Price in Screw-Capped Jars: 3-oz., 15c.; 6-oz., 25c.; 14-oz., 50c.

A New Adhesive for Mounting Photographs, etc.

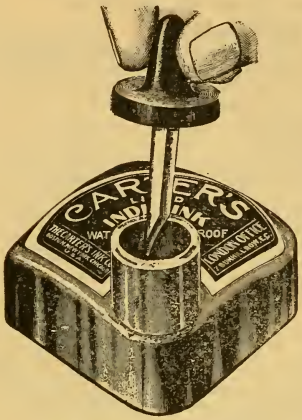
HIGGINS' PHOTO-MOUNTER.

(TRADE-MARK.)

This is an entirely novel and superior Adhesive, specially prepared for mounting Photographs, Aristotypes, Scrap Pictures, Engravings, etc. It is not a Flour or Starch Paste, but is rather a Vegetable Glue—being a new patented discovery in the chemistry of adhesives.

Unlike all Starch and Flour Pastes, this new adhesive is a perfect homogeneous combination and solution, and not only is proof to decay, but the water will never separate from the body of the adhesive in the jar, and dry out, leaving the body stiff and hard, as occurs in all PASTES. Hence dealers and consumers can safely keep this new adhesive in stock for any time without deterioration.

Prices in Screw-Capped Jars: 3-oz., 15c; 6-oz., 25c.; 14-oz., 50c.



Carter's
Liquid India Inks

Are specially prepared for Draftsmen, Architects, and Artists. The colors are rich, brilliant and dense. The inks all *flow* easily, and do not run.

The ink, neatly packed in individual pasteboard boxes, with filler and wiper, is put up in the folowing colors:

Black, "General."

WATER PROOF COLORS:

Black	Blue	Indigo Blue
Carmine	Scarlet	Vermilion
Orange	Yellow	Brick Red
Green	Brown	Violet

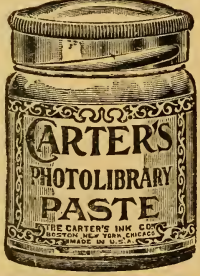
Per Bottle, ...25

If desired the ink will be put up to order in 8, 16 or 32 oz. bottles.

Carter's Photo-Library Paste.

Standard Paste for mounting Photographs, Engravings, Etchings, paper on drawing boards, or anything where paste is needed. "Whiteness is a sign of Purity." Carter's Paste is pure white. The paste is always sweet and clean.

No.		Each.
151.	Quart Jar, flint glass, with screw cap and cup . . .	$1.00
152.	Quart Jar, with screw cap	.75
152½.	Pint Jar, flint glass, with screw cap .	.50
153.	7-oz. Jar, flint glass, and patent hinged cover and brush .	.25
154.	4-oz. Jar, flint glass and screw cover .	.20
155.	3-oz. Collapsible Tube with screw top .	.10
155½.	1½-oz. Collapsible Tube with screw top	.05
160.	Gallon Jar . . .	2.50



Deane's T Squares of All Kinds.

No. 1, Unlimited Adjustment.

No. 2, Shifting Head without Adjustment.

No. 3, Limited Adjustment.

Nickel Fittings, — **Price Each.**

	Size inches,	24	30	36	42	48	54	60
Maple, Walnut Curved Head, Shellac Finish.	No. 1,	**$2.00**	$2.10	$2.20	$2.30	$2.50	$2.75	$3.00
	2,	**1.70**	1.80	1.90	2.00	2.25	2.50	2.75
	3,	**1.50**	1.60	1.70	1.80	2.00	2.25	2.50
Ashwood, Maple Lined, Walnut Curved Head, Shellac Finish.	No. 1,	**2.15**	2.25	2.35	2.50	2.75	3.00	3.50
	2,	**1.80**	1.90	2.00	2.15	2.40	2.75	3.25
	3,	**1.65**	1.75	1.85	2.00	2.25	2.50	3.00
Mahog'ny, Ebony Lined, Ebonized Curved Head, Shellac Finish.	No. 1,	**2.30**	2.50	2.65	2.85	3.00	3.30	3.75
	2,	**2.00**	2.15	2.30	2.50	2.75	3.00	3.50
	3,	**1.80**	2.00	2.15	2.35	2.50	2.75	3.25
Mahog'ny, Amber Lined, Ebonized Curved Head, Shellac Finish.	No. 1,	**3.50**	4.00	4.50	5.20	6.00	7.00	8.00
	2,	**3.15**	3.65	4.25	4.75	5.50	6.50	7.70
	3.	**3.00**	3.50	4.00	4.60	5.40	6.40	7.50
Rubber Blade, Walnut Maple Lined Curved Head.	No. 1,	**3.10**	3.50	4.00	4.50			
	2,	2.75	3.15	3.65	4.25			
	3,	2.60	3.00	3.50	4.00			

Brass Fittings. — **Price Each.**

School T Square, Cherry Blade, Curved Head, made in No. 3 only.	Size inches,	18	24	30	36
	No. 3,	$1.00	$1.15	$1.20	$1.25

Deane's Patent T Square Heads, without Blades.

Nickel Fittings. — **Price Each.**

	Size inches,	24	30	36	42	48	54	60
Walnut, Maple Lined or Ebonized.	No. 1,	$1.75	$1.80	$1.85	$1.90	$2.00	$2.15	$2.25
	2,	1.45	1.50	1.55	1.60	1.70	1.85	1.95
	3,	1.25	1.30	1.35	1.40	1.50	1.65	1.75
Mahogany, Ebony Lined.	No. 1,	2.00	2.05	2.10	2.15	2.25	2.40	2.60
	2,	1.70	1.75	1.80	1.85	1.95	2.10	2.30
	3,	1.50	1.55	1.60	1.65	1.75	1.90	2.10

Cherry, Brass Fittings, No. 3, 18 in., 75 cts.; 24 in., 85 cts.; 30 in., 95 cts.; 36 in., $1.00.

Sent postpaid on receipt of price.

Protractor, or "Climax," T Squares.

Nickel Fittings. — **Price Each.**

	Size inches,	30	36	42
Mahogany, Ebony Lined Blades and Heads, Polished.		$5.50	$6.00	$7.00
Mahogany, Amber Lined Blades, Ebonized Heads, Polished.		6.50	7.25	8.50

Duplex Paper.

No. 801.

A new Detail Drawing Paper introduced by us in place of Manila Paper, has met with great success. It is tough, hard, and uniform in grain and finish, stands erasing, and takes ink and water color perfectly.

The buff or cream color is very agreeable to the eye and admits of handling without soiling. This paper will be welcomed by all who are tired of using Manila paper for drawing. Although the price per pound is much above that of Manila, the paper is so much lighter, owing to the entire absence of mineral adulterations, that there is hardly any difference in the price per yard.

		In rolls of 30 to 40 lbs. per lb.	In rolls of 10 yards, per roll.	Per yd.
Duplex Paper, thin,	36 inches wide,	.29	$1.35	.15
" "	56 "	.29	2.15	.25
" medium,	36 "	.29	1.60	.18
" "	42 "	.32	2.00	.20
" "	56 "	.29	2 65	.30

Unprepared Heliographic Papers.

Helios Paper, Medium.

No. 802.

24 inches wide, per 50 yd. roll,	$3.20	36 inches wide, per 50 yd. roll,	$4.75
27 " "	3.50	42 " "	5.25
30 " "	4 00	54 " "	7.00

Helios Paper, Thick.

24 inches wide, per 50 yd. roll,	$4.70	36 inches wide, per 50 yd. roll,	$7.00
27 " "	5.25	42 " "	8.00
30 " "	6.00	54 " "	10.50

We are New England Agents for

Stearns, Fitch & Co.'s Patent Portable Kiln,

For Firing Decorated China, Porcelain, Pottery, and all articles requiring a High Glaze in Vitrifiable Colors.

No. 803.

No. 1. Size of Pot or Oven, 10 inches high by 12. Fires from 15 to 25 pieces with one bushel of charcoal. Weight, 250 lbs. Price, . . $15.00

No. 2. Size of Pot or Oven, 16 inches high by 12. Fires from 25 to 40 pieces with one and a half bushels of charcoal. Weight, 300 lbs. Price, $20.00

No. 3. Size of Pot or Oven, 16 inches high by 15. Fires from 40 to 70 pieces with two bushels of charcoal. Weight, 400 lbs. Price, . . $25.00

No. 4. Size of Pot or Oven, 18 inches high by 26, oval shape. Fires from 80 to 125 pieces with four bushels of charcoal. Weight, 900 lbs. Price, ... $45.00

In introducing these Kilns the inventor is assured by trial, they fully meet the wants of amateurs. They are simple in construction; durable, being made of cast iron and fire brick; compact, occupying but small space; uniform in work; can be placed in use without pipe, chimney or flue, fired in area, woodshed or on the open ground, or can be set up in an open chimney and used in the house.

These Kilns with full directions for use, and an assortment of Stilts are boxed ready for shipping.

Materials for Tapestry Painting.

Liquid Colors.

No. 804.	Per Bottle.
Chrome Yellow, light (*Jaune de Chrome Clair*),	.20
Chrome Yellow, medium (*Jaune de Chrome Fonce*),	.20
Chrome Orange, (*Jaune de Orange Clair*),	.20
Gold, Yellow (*Jaune Dor*),	.20
Gold, Ochre (*Jaune D'ocre*),	.20
Cadmium Yellow, light (*Jaune de Cadmium*),	.20
Turkish Blue (*Bleu Turquoise*),	.20
Indigo Blue (*Bleu Indigo*),	.20
Prussian Blue (*Bleu de Prusse*),	.20
Cobalt Blue (*Bleu de Cobalt*),	.20
Ultramarine Blue (*Bleu de Ultramarine*),	.20
Prussian Green (*Vert de Prusse*),	.20
Vegetable Green (*Vert de Vegetable*),	.20
Springtime Green (*Vert Printemps*),	.20
Deep Chrome Green (*Vert de Chrome Fonce*),	.20
Emerald Green (*Vert de Emeraude*),	.20
Violet Blue (*Bleu de Violet*),	.20
Violet Red (*Rouge de Violet*),	.20
Sepia Naturelle,	.20
Sepia Chaude,	.20
Vandyke Brown (*Brun de Vandyck*),	.20
Brown Red (*Rouge de Brun*),	.20
Burnt Sienna (*Terre de Sienna Brulee*),	.20
Raw Sienna (*Naturelle*),	.20
Raw Umber (*Terre Domber Naturelle*),	.20
Burnt Umber (*Terre Domber Brulee*),	.20
Saturn Red (*Rouge de Saturne*),	.20
Mars Red (*Rouge de Mars*),	.20
Rose Pink (*Rouge de Rose*),	.20
Italian Earth (*Terre de Italie*),	.20
Cassel Earth (*Terre de Cassel*),	.20
Madder Lake (*Garance*),	.20
Pink Madder (*Garance Doree*),	.20
Crimson Lake (*Laque Carminee*),	.20
Maroon Lake (*Laque Brune Fonce*),	.20
Vermilion,	.20
Carmine (*Carminee*),	.40
Payne's Gray (*Gris de Payne*),	.20
Neutral Tint,	.20
Ivory Black (*Noir de Ivorie*),	.20
Flesh Tint,	.20

Tapestry Canvas.

No. 805.

The French Tapestry Canvas is generally preferable for the reason of its being woven with the yarn prepared for this kind of painting. It has an especial affinity for the indelible liquid colors. The various widths in which this canvas is made enables it to be used for decorations of all sizes.

The following very complete assortment of selected French Tapestry Canvas will be found very desirable for painting imitations of ancient and modern tapestries.

			Per Yd.
No. 3,	37 inches wide,	Fine ribbed,	$1.60
" 4,	37 "	Medium ribbed,	1.30
" 10,	84 "	Fine ribbed,	3.85

				Per Yd.
No. 11,	82	inches wide,	Medium grain,	$3.30
" 12,	82	"	Coarse "	3.30
" 13,	82	"	Cotton Reps, fine,	4.00
" 13, B.,	51	"	Woolen " "	6.00
" 14,	120	"	Cotton " coarse,	6.00
" 15, B.,	56	"	Gobelins, fine stitch,	1.60
" 15, Ter.,	122	"	" wool, fine stitch, superfine,	15.00
" 16,	120	"	" " coarse stitch,	8.00
" 18,	120	"	" " gray tint, coarse stitch,	6.20
" 19,	82	"	Cotton Reps, fine ribbed,	4.85
" 20,	82	"	Gobelins, fine ribbed, extra fine,	6.20
" 20, Ter.,	56	"	" wool, ex. fine stitch, superfine,	8.50
" 20, Bis.,	56	"	" silk, ex. fine stitch, extra "	12.00
" 21,	120	"	" coarse stitch, superfine,	6.20
" 21, Bis.,	56	"	" " " "	1.60

The prices quoted on the above tapestries by the yard, means the running yard of whatever width the number designates,—not the square yard.

Miscellaneous Articles.

No. 806.	
Rack Easels,	$6.00
Bristle Brushes, two dozen assorted sizes,	2.00
Mahl Stick,	.25
Rouget Charcoal, assorted,	.50
Painting Table,	8.00
Plate Glass Palette,	2.00
Steel Eraser,	.50
Crayon Pencils, four grades in set,	.40
Transfer and Tracing Papers,	.30
Steel Pricker,	.25
Sponges, each,	.20
Color Glasses,	.25
Water Glasses, large size,	.45
Ivory White Mole Skin, 27 inches wide, per yard,	2.50
Gray Mole Skin, 27 " " "	2.50
Pearl White Mole Skin, 27 " " "	2.25
Silk Bolting Cloth, 40 " " "	2.25
Indestructible Medium for fixing the colors on tapestry canvas, per bottle,	.30
Gordon's Complete Work on Tapestry Painting,	3.50
Sets of Colors, Brushes, etc., in boxes, $3.00, $4.00, $6.00, and	8.00

Frost & Adams' Manila Sketch Books.

Paper Sides, Cloth Back.

No. 807.

No. 1, 3½ × 5½ inches,	.15	No. 4, 6½ × 9½ inches,	.30
No. 2, 4½ × 6½ "	.20	No. 5, 7 × 11 "	.35
No. 3, 5½ × 7½ "	.25		

Weber's Universal Drawing Boards.

Pine Panel with Hardwood Bars.

No. 808.

No. 1, 6 × 9 inches,	$1.75	No. 6, 14 × 18½ inches,	$3.00
No. 2, 7 × 10 "	2.00	No. 7, 18 × 22½ "	3.75
No. 4. 10 × 14 "	2.50	No. 8, 20½ × 28½ "	4.50
No. 5, 12 × 17 "	2.75	No. 9, 25 × 38 "	6.00

French Torchon Paper.

No. 809.

Royal,	19 × 25 inches,	per sheet,	.12
Imperial,	21 × 28 "	"	.15
Double Elephant,	26 × 40 "	"	.30

Ragged Edge "Torchon" Panels.

For Water Color Painting.

No. 810.

3½ × 4½	inches,	.03	4½ × 6	inches,	.05	7 × 9	inches,	.07
4 × 4	"	.03	6 × 6	"	.06	9 × 11	"	.10
4 × 6	"	.04						

Ragged Edge "Shell" Panels.

For Water Color Painting.

No. 815.

2 × 4	inches,	.02	5 × 5	inches,	.04	7 × 9	inches,	.07
2½ × 4½	"	.03	4 × 6	"	.04	8 × 10	"	.10
3 × 3	"	.03	4½ × 6	"	.05	8 × 11	"	.10
3½ × 4½	"	.03	6 × 6	"	.06	9 × 11	"	.10
3 × 5	"	.03	5 × 7	"	.06	10 × 12	"	.12
4 × 4	"	.03	6½ × 8½	"	.07	11 × 15	"	.15
4 × 5	"	.04						

Card Board Photo Holders.

Egg Shell and Cold Pressed Surface for Decorating in Water Color.

No. 815¼.

No. 60,	. .	.12	No. 92,	. .	.50	No. 123,	. .	.50
63,	. .	.18	93,	. .	.30	124,	. .	.50
66,	. .	.25	94,	. .	.50	125,	. .	.50
67,	. .	.18	121,	. .	.12	126,	. .	.30
91,	. .	.50	122,	. .	.18	127,	. .	.25

Turnbulls' Coronet Board.

For Water Colors. In 12 different Tints.

No. 799.

22 × 30 inches, . . . $1.00 | 15 × 22 inches, ...50

Turnbulls' Aquarelle Board.

For Water Colors. White, Extra Rough and Extra Heavy.

No. 800.

22 × 30 inches, ...75 | 15 × 22 inches, ...40

Green's Erasive Paper.

Various Tints.

No. 800¼.

11 × 15	inches,	Net,	.10
15 × 22	"	"	.20
22 × 30	"	"	.35

Vandyke Solar Paper.

At last, a PERFECT Paper for Positive Prints that

1 *Is easily manipulated.*
2 *Keeps Well.*
3 *Does not become Brittle.*
4 *Prints rapidly.*
5 *Saves original tracing.*
6 *Cannot spoil positive prints by over-exposure.*

From the original tracing a copy is made on Vandyke Paper with white transparent lines on an opaque dark-brown background. This copy is used in place of the original tracing to print from; Positive Copies, either

Black Lines on White Background (by printing on Vandyke Paper, with an exposure of about one minute in strong sunlight), or

Blue Lines on White Background (by printing, on regular blueprint paper, with about four minutes' exposure in good sunlight, or on rapid blueprint paper, with about one minute exposure in good sunlight).

The thin and most transparent Vandyke Solar Print Paper is, of course, the most suitable to make Positive copies from.

If a Vandyke Print is only to serve as a Negative, it should be made from a tracing placed into the frame with the wrong side (not picture side) against the glass. By this method the lines of the tracing come into direct contact with the surface of the sensitive paper thus shutting out all light that might otherwise come sideways between the tracing and the Vandyke Solar Paper.

Vandyke Solar Paper—

Medium Thick.	Width, 30 in.	36 in.	42 in.
Per roll of 10 yards	$1.80	$2.10	$2.40

Vandyke Solar Paper—Thin.

(For mailing and for negatives.)	Width, 30 in.	36 in.	42 in.
Per roll of 10 yards	$1.80	$2.10	$2.40

Fixing Salt furnished with every roll.

Vandyke Salt. (For intensifying and fixing prints.)

Per 4-ounce box . . . .15 Per 1-pound box 40

Directions for Making Vandyke Prints: If printing from an orignal tracing expose about one minute in sunlight.

The exposure is sufficient when the paper protruding over the edge of the original assumes a dark-tan color, and when the lines of the original assume a little color on the copy. Wash the print for about three to five minutes in water (running water is preferable), and then, wet as it is, fix it by an immersion into a solution consisting of about one-half ounce of fixing salt to one quart of water.

For a small number of Vandyke Prints it will be more convenient to apply the fixing solution with a brush or sponge. After the fixing solution has been applied, wash the print again in water and then hang it up to dry.

The simplest method to smoothen (for the purpose of printing from) a large copy made on above is to roll it into the smallest possible roll.

The Roll Paper Bracket.

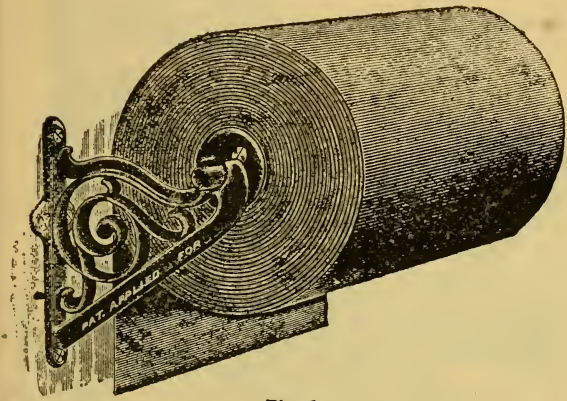


Fig. 1.

The above cut illustrates a new and useful device, which fills a want long felt by architects, engineers, draughtsmen, tailors, and all those using paper in the form of a roll. It is also equally convenient in handling "Marline." Hitherto, no convenient method has been devised, and it has been the custom to use some expensive and crude apparatus for suspending the rolls of paper.

Having received many complaints as to the difficulty of handling roll paper, we are pleased to be able to place before our customers a simple and effectual device, consisting of a pair of ornamental black and gilt brackets of unique design, as illustrated in Fig. 2. These brackets are formed to receive a roll, provided with a flange (shown in Fig. 3), so made as to be screwed to the wooden plugs which are found in the ends of roll paper.

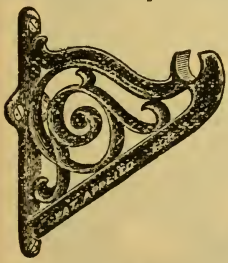
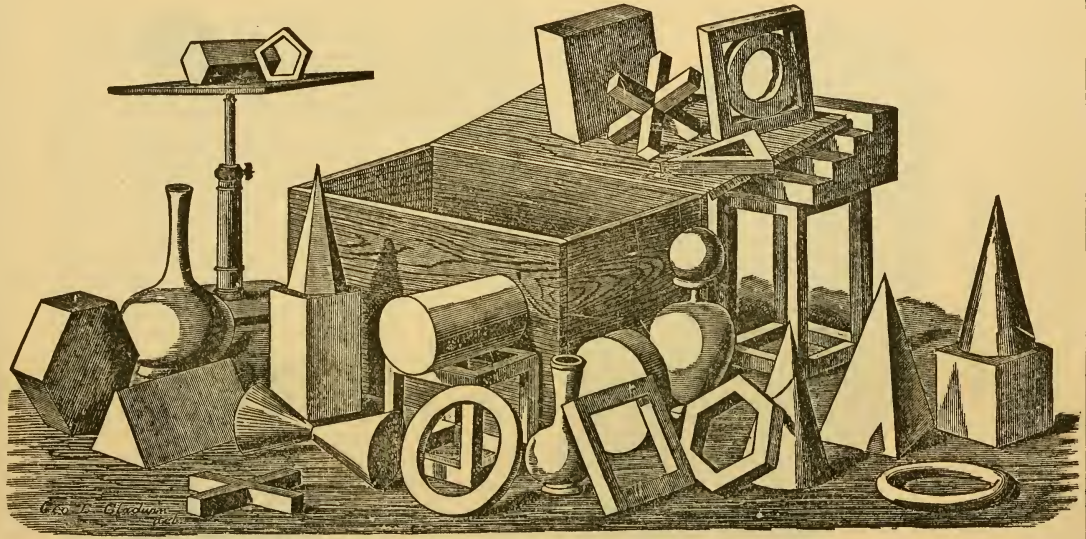


Fig. 2.

These brackets can be screwed to the wall, desk or any convenient place, and the exact amount of paper which is required can be readily drawn down and cut off, thus saving great waste.

Fig. 3.

Price, complete, $1.00.



American Drawing Models.

American Drawing Models

For Common Schools, Drawing Classes, and Schools of Art and Science.

Designed by WALTER SMITH, Art Master.

No. 819.

SET No. 1 consists of the following pieces:

1. *Sphere.* Four inches diameter.
2. *Cone.* Base four inches diameter, altitude eight inches.
3. *Cylinder.* Base four inches, altitude eight inches.
4. *Cone, in Sections.* Base four inches, altitude eight inches.
5. *Cube.* Side four inches.
6. *Oblong Block.* Four inches square, length eight inches.
7. *Triangular Prism.* Side of base four inches, length of prism eight inches, base equilateral.
8. *Hexagonal Prism.* Diagonal of base four inches, length of prism eight inches, base regular.
9. *Rectangular Pyramid.* Side of base four inches, altitude eight inches.
10. *Hexagonal Pyramid.* Diagonal of base four inches, altitude of pyramid eight inches.
11. *Square Block.* Six inches square, two inches thick.
12. *Disk.* Six inches diameter, two inches thick.
13. *Flight of four steps.* One inch rise, one and one-half inch tread, width, six inches.
14. *Double Cone.* Altitude eight inches, diameter at junction of cones one inch, bases of cones four inches.
15. *Cross.* Six inches, made of seven eighths inch stuff.
16. *Triangular Frame.* Equilateral Triangle of six inches square, seven eighths inch stuff.
17. *Square Frame.* Six inches square, seven eighths inch stuff.
18. *Pentagonal Frame.* Outer Pentagon inscribed in a circle of six inches side, seven eighths inch stuff.
19. *Hexagonal Frame.* Side of three inches, seven eighths inch stuff.
20. *Circular Frame.* Square in section, six inch diameter, seven eighths inch stuff.
21. *Circular Ring.* Circular in section, six inches diameter.
22. *Double Cross.* Six inches, seven eighths inch stuff.
23. *Skeleton Cube.* Six inches side, seven eighths inch stuff.
24. *Oblong Frame.* Twelve inches long, six inches square, seven eighths inch stuff.
25. *Square Frame and Ring.* Six inches square, seven eighths inch stuff. Circle inscribed.
26. *Hexagonal Disk.* Two inches thick, six inches diagonal.
27, 28, 29. *Three Selected Vases.*
30. *Adjustable Model Stand.* Top and bottom eleven and one half inches square.

Price, ... $20.00

SET No. 2.—A box containing ten Wooden Vases, duplicated from the Greek originals.

Price, ... $10.00

SET No. 3.—Four Large Models, for lectures and instruction to classes. 1. Cube, fifteen inches side. 2. Cone, with base twelve inches, altitude eighteen inches. 3. Cylinder, base twelve inches, altitude eighteen inches. 4. Hexagonal Prism, base twelve inches, length, 24 inches. Price List sent upon application.

Price, ... $15.00

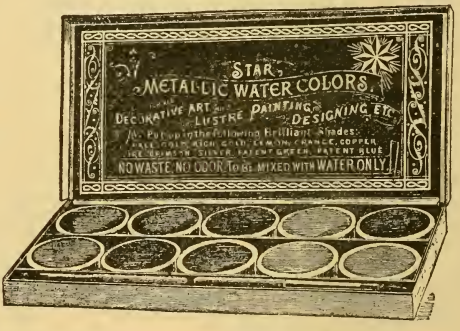
Leggett's Enamel Paints, Ready for Use and Quick Drying.

For Baskets, Chairs, Willow Ware, and other Decorative Work.

Twelve Colors in ½ lb. Cans. Price, .20

Ivory White	Light Pink	Light Blue
Light Green	Yellow	Light Brown
Dark Red	Turkey Red	Black
Dark Brown	Green	Cocobola

Metallic Water Colors.



In Saucers, ... 10 each

Colors may be had separately.

Put up in the following brilliant shades. 10 ; Large, .25.

Pale Gold	Copper	Silver
Rich Gold	Fire	Patent Green
Lemon	Crimson	Patent Blue
Orange		

Improved

Scales for Draughtsmen.

No. 820.

Though designed more particularly for draughtsmen, the form of these Scales makes them very convenient for many other purposes. Those we have in stock are made of steel, nickel plated; and a 12″ scale weighs but 2½ oz. Each Scale has but one kind of graduation, and the same on both sides, which relieves the draughtsman from the constant care and loss of time required to avoid using the wrong graduation, when there are several kinds on the scale.

List of Scales.

For Architects.

12 Inches Long.		6 Inches Long.	
No. 1, Scale	3″ = 1 foot.	No. 8, Scale . . .	½″ = 1 foot.
" 2, "	1½″ = 1 "	" 9, " . . .	¼″ = 1 "
" 3, "	1″ = 1 "	" 10, " . . .	3-16″ = 1 "
" 4, "	¾″ = 1 "	" 11, " . . .	⅛″ = 1 "
" 5, "	½″ = 1 "	" 12, " . . .	3-32″ = 1 "

For Engineers

12 Inches Long.		Decimal Foot.	
No. 13, ...	20ths of an inch.	No. 19, ...	1-200th of a foot.
" 14, ...	40ths "	" 20, ...	1-250th "
" 15, ...	50ths "	" 21, ...	1-400th "
" 16, ...	60ths "	" 22, ...	1-500th "
" 17, ...	80ths "	" 23, ...	1-800th "
" 18, ...	100ths "	" 24, ...	1-1000th "

Miscellaneous.

No. 25, 12″ long, graduated on one side 1-16″, other side 1-32″.
" 26, 12″ " " both sides to 1-100 inch.
" 27, 6″ " " on one side 1-16″, other side 1-32″.
" 28, 6″ " " both sides to 1-100 inch.
" 60, 12″ " " to 32nds, ¾″ = 1 inch.

Price, 12″ . . . . . $1.25 | Price, 6″ $1.00

Metallic Triangular Scales.

Patented Dec. 16, 1873.

No. 821.

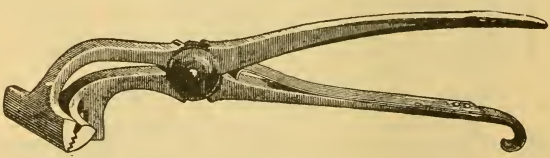
We desire to call the attention of Draughtsmen to our new Patent Metallic Triangular Scales, which are of the exact size and shape of the common 12 inch Triangular Boxwood Scales. They are made from brass tubing with the ends closed, nickeled with a dull finish, and weigh less than 3½ ounces.

The liability of the wood scales to crack, warp or twist, the chipping of their edges, and their variation from standard measurement, are well known to all who have used them. These objections we claim to have overcome in the new scales, for which we respectfully solicit the patronage of the public.

Prices of Patent Metallic Triangular Scales:

No. 64. 12 inch, divided to scales of 3-16, 3-32, ⅛, ¼, ⅜, ¾, ⅛, 1, 1½, and 3 inches to the foot, and 16ths of inches,	$2.50
No. 73. 12 inch, divided on one edge each to 10ths, 20ths, 30ths, 40ths, 50ths and 60ths of inches,	2.50
No. 73. 12 inch, divided to 20ths, 30ths, 40ths, 50ths, 60ths, 70ths, 80ths,	3.00
No. 73. 12 inch, divided to 20ths, 30ths, 40ths, 60ths, 80ths, 100ths,	4.00
No. 73. 12 inch, divided to 20ths, 30ths, 40ths, 60ths, 80ths, 100ths, reading both ways,	4.50

Canvas Pliers or Strainer, for Stretching Canvas.



No. 822.

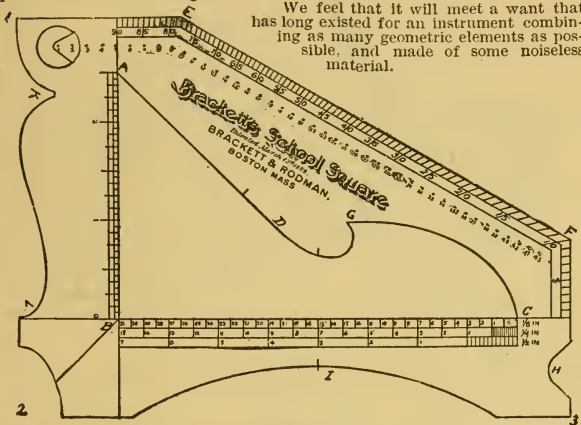
New American Style, Plain Japanned,	$2.00
New American Style, Polished Bright,	2.50

Brackett's School Square.

No. 824.

This Combination Instrument is presented for your consideration, in the hope that you may fully appreciate its usefulness. It is designed by a practical draughtsman, who has had wide experience in teaching Drawing in the public schools and evening schools for mechanics.

We feel that it will meet a want that has long existed for an instrument combining as many geometric elements as possible, and made of some noiseless material.



Description.

A. B. C. (see cut) is an angle of 90 degrees. B. A. D. is an angle of 45 degrees. E. F. is an angle of 30 degrees to 2-3, and 60 degrees to 1-2. The graded lines 1—E., E.—F., F.—3, give the degrees of angles from 1 degree to 90 degrees, radiating from point B. The graded line A. B. is divided into inches and sixteenths. The line C. B. is graded with the scales one eighth, one quarter, and one half inches. The Curve G. C. is an elliptical curve. H. a quadrant with tangents. I. a circular curve. K. L. compound curves. The lines 1—2 2—3, form an angle of 90 degrees. 1—E. E.—F an angle of 150 degrees, E.—F. F.—3, 120 degrees. The holes 1, 43, are to be used to draw circles by placing a pin in 1, as a centre, and a pencil point in any of the remaining holes to obtain the required radius.

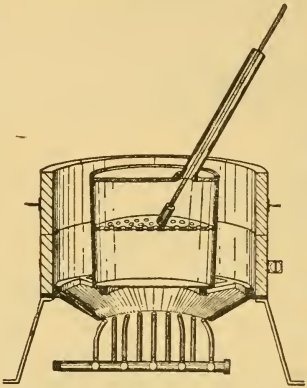
This Instrument can be used against a straight edge or T Square, or in connection with a pair of compasses, but good work can be done without either of these aids. It has no sharp angles to turn up and become dog-eared.

What Can be Done with It.

1st—Any of the useful and practical problems in Geometry can be constructed with it. 2d—All problems in Perspective. 3d—The Elements of Projection. 4th—All problems in Isometric Drawing. 5th—Building Construction and Wood Working. 6th—Machine Drawing. 7th—Topographical Drawing.

It will be seen by the above that this instrument is very useful to Students and Mechanics. No expense has been spared, however, to make it as accurate as possible, so that it may be also useful to Draughtsmen, Engineers, and Architects. It is a combination of 45, 30, and 60 degrees Triangles, Scales, Protractor, French Curves and Compass in one Plate, while the cost is not much more than the cheapest of these articles taken separately. It will be manufactured in Card Board for the use of schools, at 20 cents each. The usual discount to the trade, or to parties ordering in quantities.

The Portable Keramic Kiln, for Firing Decorated Glass, China and Bisque.



(Patented by F. E. HALL, Feb. 12, 1889.)

Frost & Adams, New England Agents.

The Portable Keramic Kiln
No. 825.

Is the cheapest and most convenient Kiln ever put upon the market. Its firing qualities are of the highest order, and the novel features of its construction present an adjustability hitherto unapproached, admitting the use of different sizes of firing pots in the same Kiln. The Kilns fire with gas, wood, coke or charcoal, and can be converted, at small expense, from one form into the other.

Keramic Test Rod (patent applied for) can be used with all kilns and ensures perfect firing each time.

Complete book of instruction, whereby any amateur can fire perfectly at once, 25 cents, post paid to any address.

The Keramic Kiln is endorsed by artist and pupils in all parts of the country.

No. 1. For Charcoal Firing. (Patented.) Firing Pot, 8 inches deep, 10 inches in diameter, circular form. Kiln packed for shipment, weight about 100 lbs. Price, $12.00 Charge for boxing and cartage, $1.00. Kiln *fires in twenty minutes* at a cost of 10 cents.

No. 1. For Gas Firing. (Patent applied for.) Same Kiln, arranged for *Gas Firing*, with Keramic Gas Burner and asbestos cover, price $15.00; boxing and cartage, $1.00. Fires in about half an hour at a cost of five cents. Connect with ⅜ or ½ inch gas pipe.

No. 2. For Charcoal Firing. (Patented.) Firing Pot, 10 inches deep, 12 inches in diameter, circular form. Kiln packed for shipment, weighs about 200 lbs. Price, $18.00. Charge for boxing and cartage, $1.25. Kiln fires in thirty minutes at a cost of 20 cents.

No. 2. For Gas Firing. (Patent applied for.) Same Kiln, arranged for *Gas Firing*, with Keramic Gas Burner, and asbestos cover, $25.00. Boxing and cartage, $1.25. Fires in 45 minutes at a cost of two cents. Connect with ½ or ¾ inch gas pipe. Kiln fires without smoke or odor.

No. 3. For Charcoal. (Patented.) Firing Pot, 14 inches deep, 14 inches in diameter, circular form. Kiln packed for shipment weighs about 300 lbs. Price, $22.00. Charges for boxing and cartage, $1.25. Fires in forty-five minutes at cost of 20 cents.

No. 3. For Gas Firing. (Patent applied for.) Same Kiln, arranged for *Gas Firing*, with Keramic Gas Burner and asbestos cover, $35.00. Boxing and cartage, $2.25. Fires in sixty minutes at cost of 15 cents. Connect with ¾ or 1 inch gas pipe, and add stove pipe connection.

No. 4. For Charcoal Firing. (Patent applied for.) Firing Pot, 19 inches deep, 15 inches in diameter, circular form. Kiln packed for shipment weighs 400 lbs. Price, $28.00. Boxing and cartage, $1.50. Kiln fires in one hour and a half at cost of 35 cents.

No. 4. For Gas Firing. (Patent applied for.) Same Kiln equipped for *Gas Firing*, with Keramic Gas Burner and asbestos cover, $45.00. Boxing and cartage, $1.50. Fires in 70 minutes at a cost of 20 cents. Connect with 1 inch gas pipe, and use stove pipe led to a chimney or out of doors, and communicate with cover of the Kiln by a "slip joint," a piece of stove pipe of size to slip *over* smoke stack of Kiln, *within* the piece of stove next above itself. A wire is fastened by a

hinge to the "slip joint," and hooks on to a suitable hook or projection upon the piece of stove pipe just above. At conclusion of a firing, the joint, by means of this wire, can be slipped up from the Kiln and fastened, when the Kiln can be opened and cooled at once.

No. 5. Larger size Keramic Gas Kiln, price $90.00. Particulars upon application to manufacturer or agents.

"PERPETUA FRESCO"

A NEW ART.

Supplies a long felt want for Painting in Unglazed Oils on Satin, Silk, Tapestry, Wool, Leather, &c. Also for Mural Decorations.

It consists of a foundation (to be placed over the sketch), which does not spread or cockle the material, as it dries immediately, and a Special White, which as a surface gives the painting a soft, velvety appearance, unequalled by any other method.

Water colors can also be used on the same foundations, but oils are far easier to manipulate and are quite as cleanly if only ordinary care be taken and a china palette used. They require no mediums, turpentine being sufficient to thin with.

The full instructions are given on the bottles, 25c. each.

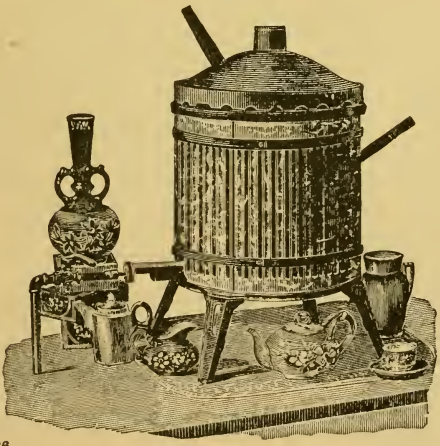
In use in nearly all decorative Art Studios is London and Paris.

None genuine without signature of the inventor and maker, M.F. O'Connell.

FROST & ADAMS, Wholesale Agents, 37 Cornhill, Boston, Mass.

Fitch Gas Kiln,

For Firing Decorated China and Glass.

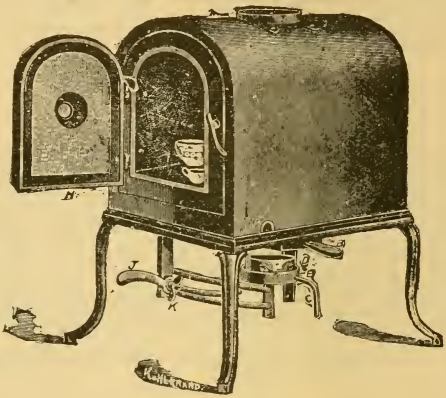


No. 826.

Size of Muffle, 16 inches high by 12, ... Price, $25.00.

These Kilns, with full directions for use, and an assortment of Stilts are boxed ready for shipment.

The Revelation China Kiln.



Directions for Setting Up and Operating.

The kiln can be placed on the floor like a small stove, or set upon a box or table. The latter makes it extremely convenient to stack and watch. Have the box or table at least 24x28 inches for the top, and about two feet high, and covered with sheet iron or zinc. Place it near the chimney where you wish the kiln set up. The kiln is shipped with as many parts fitted together as possible, so that any man of ordinary strength can put it in working order by following these directions:

1. After crate and packing are removed, screw legs into corners of square plate, which forms base of kiln, and place in the box firmly.

2. Screw handle J to arm at K so that it serves as a lever to raise and lower burner. Place sheet iron collar in burner so that triangular openings are downward.

3. Shove the diaphragm into plate made for it in base at B so that the oval side of handle is on top.

4. Lift the kiln proper and place upon base so that it rests evenly.

5. Connect the kiln with chimney hole. In case this is smaller than pipe, enlarge it instead of tapering pipe.

6. Place the muffle in kiln so that it rests on the su ports. Adjust it as far back as possible, yet so as to form a joint or narrow opening with front wall of kiln.

7. Pack this opening between muffle and kiln with asbestos fibre (shipped in paper sack). Put fire clay plug in hole F.

8. Put a small piece of asbestos fibre in burner to serve as a wick in lighting, also place a receptacle under overflow pipe C.

9. Connect small pipes with oil tank and hang or set the latter in most convenient way, so oil will flow from stop cock into cup E. The tank may be placed on a level with feed cup so that pipe comes straight, making unnecessary the use of elbow and drop pipe. After tank is filled with kerosene oil, the kiln is ready to operate.

Directions for Firing Revelation China Kiln.

1. Turn the valve, so the oil will drop slowly into cup.

2. Place a lighted match near the piece of asbestos in burner, so it will ignite as soon as saturated with oil.

3. Raise burner until within about half an inch from bottom of kiln and so the red flame may be seen through the triangular aperture in the collar. The exact distance for the burner to be raised will be determined later and is dependent upon chimney draught. After kiln has been going for a little time, a steady blowing or a slight roar will be heard; should this be *very* strong and the flame sputter, raise the burner.

4. Let the oil drop slowly for about ten minutes, or until the burner is hot; then turn on until it flows in a very fine stream and let it remain this way for about twenty minutes longer; then increase the flow gradually. As much oil can be turned on as the burner will consume and vaporize. Too much oil retards rather than hastens the firing, so turn on only as much as burner will receive and consume readily, and not overflow from pipe C. If oil drops from overflow pipe it is a signal that too much is turned in, so turn down for a few minutes.

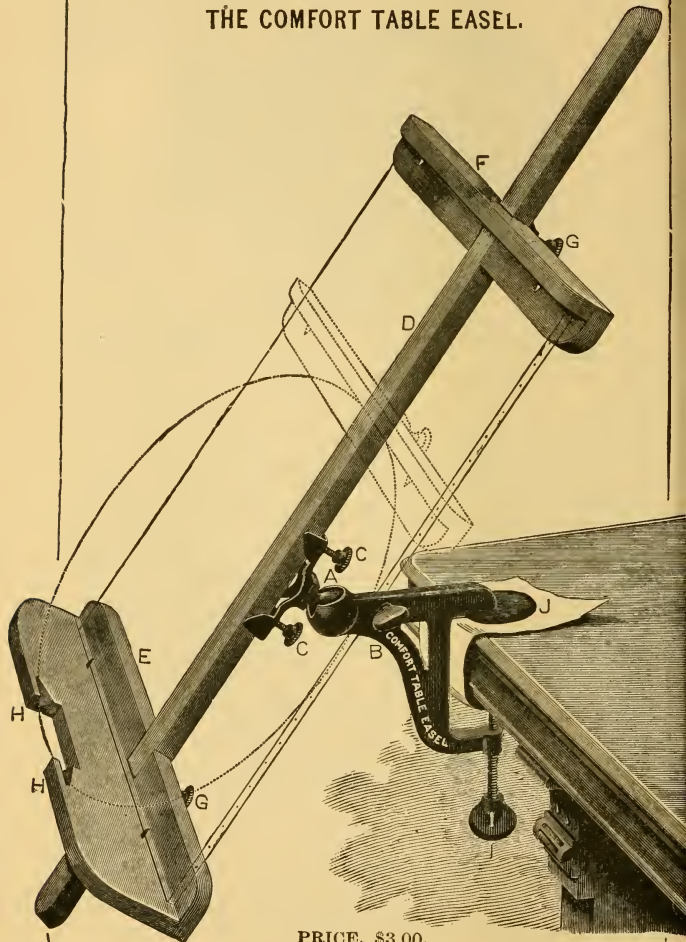
5. After about thirty or forty minutes, depending upon how the kiln is stacked, a faint red glow will appear in the muffle, which may be seen by looking through the mica window. This will increase noticeably, until kiln is flooded with a red glow, known as "rose heat." The kiln will now very soon be ready to be turned off. The exact moment is a fine matter to determine in theory, yet it is the result of practice and one, in a short time, knows almost by instinct when a kiln has been fired sufficiently. However, after the kiln has been thoroughly red for a few minutes, it will seem to grow paler in tone, and at the same time a beautiful glow, commonly called "sunshine" will spread over it. At this point turn off the oil. If you have been accustomed to using an iron firing pot, do not expect to see exactly the same kind of a glow at the finishing point. The red hot iron itself lends a slightly different and *redder* tone, and afterward more of a "bloom" or "mist." The tone from the fire clay muffle is rather brighter and clearer, sunnier.

After setting up the kiln give it one or two firings to a very high heat before putting the china in.

No. 1.		$30.00
No. 4.		40.00
Extra, if ordered:	Oil Tank and connections,	2.75
	Seven-inch Pipe filled with Asbestos, per length,	3.00
	Elbows, each,	2.50

Delivered free on board cars. No charge for boxing.

THE COMFORT TABLE EASEL.



PRICE, $3.00.

The Comfort Table Easel.

Description of Cut on opposite Page.

"A." Ball Socket on which the bar or easel "D" can be turned to *any* position or angle desired.

"B." Thumbscrew to fasten the easel firmly in the desired position. This thumbscrew should be loosened before changing the position of the easel-bar "D."

"C C." Setscrews of clamp in which the bar "D" slides, so that it can be raised or lowered to work on, either standing, sitting or reclining.

"D." Bar or Easel, 33 inches long, 1¾ wide and ¾ thick. (Will hold any piece within 30 inches long.) Should a longer bar be desired, it can be made by any carpenter.

"E." Lower Rest or shelf. "F." Upper Rest.

"G G." Setscrews to secure the rests at any desired height on bar "D."

"H H." Notches to firmly hold any plaque or other circular piece.

"I." Clamp—thumbscrew for fixing the easel to a table or other support.

"J." A piece of paper folded to prevent marring the table.

The material used is rock maple and malleable iron, tastefully finished and made in the best possible manner. The screws, being secured, cannot be lost.

The Ball, being of malleable iron, *will not wear down* below the coating of galvanizing.

We Claim

That this easel, being adjustable to *any* position, perfectly portable and firmer than all but the largest easels, cannot be approached by anything in the market for all work of ordinary size.

It is particularly welcome to Invalids (it being also an excellent book and music holder); to water-color and crayon Artists; and as a drawing board and plaque holder.

Used in the household and the studio, on board ship and in travelling generally.

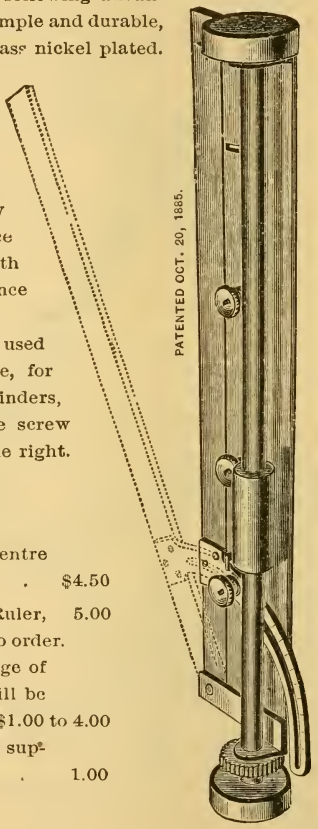
It folds up very compactly, making a package 33 inches long and about 2 inches square and weighs 4½ lbs.

Price, ... $3.00

The "Universal" Ruler and Section Liner.

This Ruler combines the following advantages: it is accurate, neat, simple and durable, being made of steel and brass nickel plated. The cuts on the opposite page were drawn with this Ruler and illustrate a few of the many things which may be done with it. Lines may be drawn in any direction and at any distance apart, from one one-hundredth of an inch to any distance desired.

This instrument may be used without the spacing device, for parallel ruling, shading cylinders, etc., by simply turning the screw near the ratchet towards the right.



PRICES:

Six inch Ruler, without centre point, ... $4.50

Eight and one half inch Ruler, 5.00

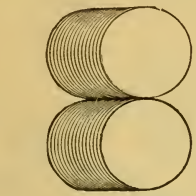
Larger sizes supplied to order.

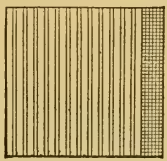
A nickel plated straight edge of any length up to 3 feet, will be furnished for . . $1.00 to 4.00

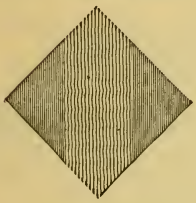
A velvet lined case will be supplied for 1.00

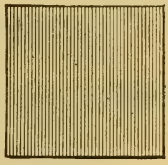
Samples of Work done by

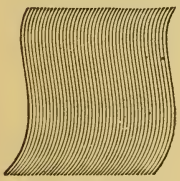
The "Universal" Ruler and Section Liner.

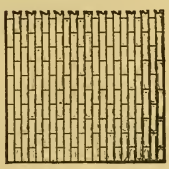


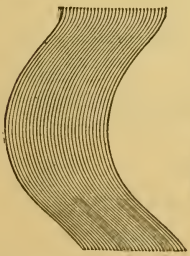


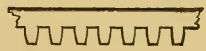


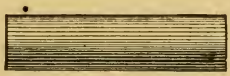




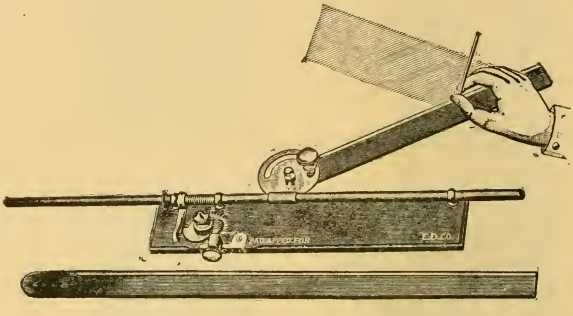








Inman's Section Liner and Shader.



(PATENT APPLIED FOR.)

This is the Most Efficient Section Liner and Shader for the Least Money.

THE PARTICULAR ADVANTAGE

Of this instrument is in its adaptability as a shader for concave, convex, curved and cylindrical surfaces. For such shading, scarcely an extra move or thought is necessary beyond that required in the simple process of section-lining or cross-hatching. The small thumb-wheel, which is turned in cylindrical shading, is in such a position that the thumb and second finger, with which it is turned, rest naturally upon it, leaving the fore-finger free to manipulate the lever which moves the straight edge.

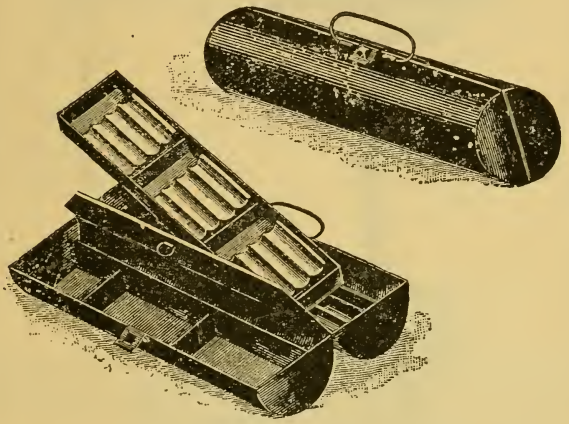
The draftsman will find it worth the price asked, for the simple purpose of spacing and ruling, preparatory to lettering.

Inman's Section Liner and Shader, with one Ruler 7 inches long and another Ruler 13½ inches long, in case, . . each, $1.80

Special attention is called to our New Oil Color Sketching Box, known as

The "Music Roll" Box.

(Patent Applied for.)



The most compact and complete Oil Color Box ever made. Fitted with a double tray, containing spaces for twenty-one 4-inch tubes, with lid to hold colors firmly in their places; also spaces for brushes, and three 2-ounce oil bottles. The space over the brushes and oil bottles accommodates a folding palette. Size of box when closed, 13 inches long and 3 inches in diameter, resembling a lady's music roll.

Price, empty, ... each, $1.75.

Oiled Folding Mahogany Palettes, to fit above box.
Oils and Varnishes, in 2-oz. bottles, to fit above box.

Ladies' New Light Sketching Umbrella.

With 31 inch arms, spreading to 62 inches, with staff and nickel-plated trimmings, weighing 2¾ lbs. Price, $5.00.

New Water Color Sketching Staff or Rest.

The cut shows the water color box on the rest ready to be used. The staff has an iron point so it can be set firmly into the ground by the side of the artist. It is highly recommended by those who have used it during the past season.

Large size, wood, 32 inches long, weighs 13 oz.
Small size, wood, 26 " " 9 "
Small size, bamboo, 26 " " 5 "
Price, ... $1.25

Plastelina.

The attention of the world of art and artists is called to this newly discovered substance for use in modeling.

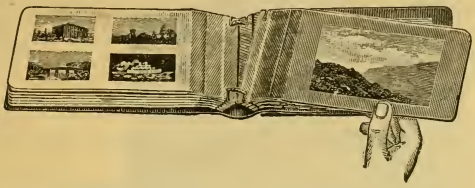
Plastelina in texture is identical with clay, but unlike clay, it requires no moisture, and is absolutely frost-proof.

Plastelina never freezes, and is warranted to remain perfectly soft and pliable for years. It contains no injurious or dangerous ingredient of any kind.

It is now in regular use by many prominent artists, who report most satisfactory results. Price per pound, ... net, .75

FROST & ADAMS CO., 37 CORNHILL, BOSTON:

The Gilson Adjustable Album.

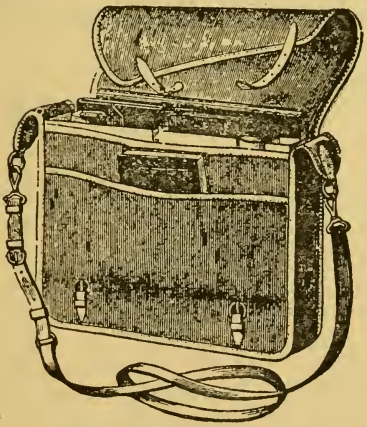


Adjustable Covers. Interchangeable Leaves.

The only album that will fit collections of all sizes, employing from one to 48 leaves. Leaves may be added, taken out, or changed in position without disturbing other leaves. The albums are made up in three styles of leaves. Book complete, ... from .80 to $5.00

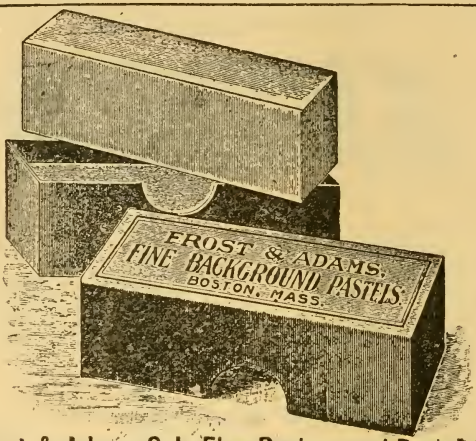
Correspondence solicited.

Tourists' Sketching Bags.



Made of sateen and arranged to hold sketching block, color box, water-bottle, sketch book, brush pouch, etc.

Size 10 × 12, ...	**$6.00**
Size 11 × 15, ...	**6.25**



Frost & Adams Co's. Fine Background Pastels.

LARGE SQUARE STICKS.

3 Inches Long. 1 Inch Square. Price, each, 25 cents.

Black, Blue Black, White				
Grays,	Nos.	1 to	12	inclusive.
Fresh Pinks	"	135 "	140	"
Sky Blues,	"	150 "	155	"
Peacock Blues	"	160 "	165	"
Peacock Greens,	"	170 "	175	"
Blue Grays,	"	180 "	185	"
Gobelin Greens,	"	190 "	195	"
Ultramarine Blues,	"	200 "	205	"
Grayish Blues,	"	210 "	215	"
Cadet Blues	"	280 "	285	"
Gobelin Blues,	"	380 "	385	"
Dark Cadet Blues,	"	400 "	405	"
Dark Crimsons,	"	220 "	222	"
Plums,	"	223 "	225	"
Dregs of Wine,	"	235 "	250	"
Old Golds,	"	260 "	262	"

Snuff Browns,	Nos.	263 to	265	
Dark Browns,	"	266 "	269	
Sage Greens,	"	270 "	275	inclusive.
Castor Drabs,	"	290 "	295	"
Dark Olive Browns,	"	300 "	305	"
Wood Browns,	"	320 "	331	"
Greenish Grays,	"	310 "	315	"
Dead Nile Greens,	"	340 "	345	"
Red Browns,	"	350 "	355	"
Light Olives,	"	360 "	366	"
Olive Greens,	"	390 "	395	"
Bronze Greens,	"	410 "	415	"
Dark Olives	"	420 "	425	"
Apple Greens,	"	430 "	435	"
Beaver,	"	440 "	445	"
Golden Browns,	"	450 "	455	"
Old Roses,	"	460 "	465	"

The following are odd shades not running in lines and only one or two shades of each.

Light Buff,	No.	1006
Dark Buff,	"	1007
Naples Yellow,	"	1008
Gold Ochre	"	1009
Very Dark Beaver	"	1005
Dark Peacock Green,	"	1002
Very Dark Blue Slate,	"	1004
Army Blue,	"	1003

Dark Blue Purple,	No.	1016
Medium Red Purple,	"	1017
Lilacs,	Nos.	1013 and 1014
Canary,	No.	1010
Medium Olive Green,	"	1001
Olive Drab,	"	1011
Light Gobelin Green,	"	1015

Frost & Adams Co's

American Japanned Tin Water Color Sketch Boxes.

No. 188a.

6 Half Pans,	$ .75	20 Half Pans,	$1 35	16 Whole Pans or 32½,	$1.35
8 "	.85	24 "	1.50	18 " " 36½,	1.45
10 "	.95	6 Whole Pans or 12½,	85	20 " " 40½,	1.55
12 "	1.00	8 " " 16½,	1.00	24 " " 48½,	1.75
16 "	1.25	10 " " 20½,	1.15		
18 "	1.30	12 " " 24½,	1.25		

Frost & Adams Co's

Cheap Wooden Palettes for Oil Painting.

OVAL AND SQUARE.

9 in.,	.20	12 in.,	.25	15 in.,	.35
10 "	.20	13 "	.30	16 "	.35
11 "	.25	14 "	.30		

Glue, etc.

Williams' Glue, small,	.15	LePage's Glue, small,	.15	Carter's, small,	.15
" " large,	.25	" " med.,	.25	U. S. Treasury,	.15
Chase's " small,	.15	Parlor Paste, moist,	.25	Taurine, small, Net,	.15
" " med.,	.25	" " dry.	.25	" med., "	.25
" " large,	.35	Diamond Paste,	.25	" ½ pint, "	.35
Peter Cooper's Glue,	.25	Mucilage, Sterling,	.15	" 1 " "	.60
Adamantine Cement,	.25				

Frost & Adams Co's Detail Drawing Pencils.

Five Grades, 1, 2, 3, 4, 5, ... per dozen, .40

Winsor & Newton's Celebrated Cumberland Lead Pencils.

Free from grit and yielding color readily.

3B, B, HB, F, ...15

Sketch Books, Full Linen, Flexible Covers.

A Fine Grain Surface, Very Desirable for Pencil.

No. 1. 3¾ × 5¾ inches,	.10	No. 4. 5¾ × 9⅞ inches,	.25
No. 2. 4½ × 6¾ "	.15	No. 5. 7 × 11 "	.30
No. 3. 4½ × 7⅛ "	.20	No. 6. 8½ × 11 "	.35

Frost & Adams Co's

Water Color Sketch Books,

Of Whatman's Paper, Full Linen Covers.

3½ x 5,	.35	5½ x 9,	.65	9 x 11¼,	1.25
5 x 7,	.55	7 x 10,	.85	10 x 14,	2.00

Frost & Adams Co's

Pencil Sketch Books,

Of English Cartridge Paper, Full Linen Covers.

3½ x 5,	.25	5 x 7,	.45	7 x 10,	.80

Arnold's Water Color Paper.

A Superior Unbleached Water Color Paper.

72 lb. Imperial Cold Pressed,	.13	90 lb. X. Rg., Xtr. Rg.,	.20
72 " " " Xtr. Rg.,	.13	140 " C. P., "	.30
90 " C. P., "	.20	140 " X. R., "	.30

KLEICERA.

A New Modeling Material.

Those who have had any experience in modeling in clay, and have appreciated all its imperfections, and the difficulties with which it is worked, will be glad to learn that a new material has been invented, which, while being as ductile and easy to work as clay, has none of its undesirable qualities. Its advantages are as follows:

1. It is not affected by heat or cold.
2. It does not dry, shrink nor swell like clay, which needs constant wetting
3. It is not expensive as wax, and is much more mobile and even to work.
4. It will stay just as it is modeled, while moistening ordinary clay washes the fine lines.
5. A low relief can be modeled in it for any length of time. Clay would crack, swell and wash out.
6. It is perfectly harmless, and keeps the hands soft and smooth, besides being neat to model in.

When the surface is left quite rough, it is sometimes necessary before casting to put on a thin coating of shellac, using a soft brush. This will prevent air bubbles from forming on the surface. After the cast is taken, the shellac can be washed off with alcohol, and the Kleicera will be in a good condition to use again.

Artists will do well to give it an early and thorough trial.

Kleicera is well adapted to take the place of the modeling clay used in the Kindergarten Schools.

Price, ... Net, per lb., $1.00.

New Canvas Faced, Fancy Edged Panels,

For Oil Painting.

No. 0921.

Size 4 x 6, . .	Price 25 cents.	Size 6 x 12, . .	Price 45 cents.
" 5 x 7, . .	" 25 "	" 8 x 10, . .	" 45 "
" 5 x 10, . .	" 30 "	" 7 x 14, . .	" 50 "
" 6 x 8, . .	" 30 "	" 8 x 12, . .	" 50 "

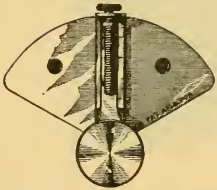
Size, 10 x 12, .65 Size, 10 x 14, .70 Size, 12 x 14. .75

No. 0922.

Size 4 x 6, . .	Price 25 cents.	Size 6 x 12, . .	Price 45 cents.
" 5 x 7, . .	" 25 "	" 8 x 10, . .	" 45 "
" 5 x 10, . .	" 30 "	" 7 x 14, . .	" 50 "
" 6 x 8, . .	" 30 "	" 8 x 12, . .	" 50 "

Size, 10 x 12, .65 Size, 10 x 14, .70 Size, 12 x 14. .75

THE
STANDARD
DRAWING SQUARE ATTACHMENT.



A parallel ruling and section lining attachment for drawing squares.

The simplicity of this attachment will at once commend it to the draughtsman. When it is once upon the square, it is always at hand and ready for use.

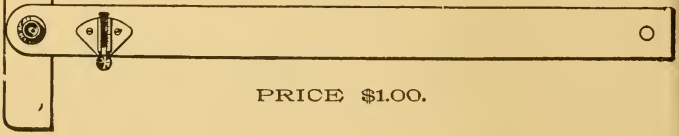
This attachment, when fastened to the square blade, in no way interferes with its general use, and adds an element to it whereby the draughtsman is able to produce the most accurate and perfect work in section lining and in parallel-equally-spaced line drawing.

The photo-electrotype work on the face of this sheet is a fac-simile of some of the work done by the use of this instrument.

Each instrument is put up in a box, with screws and screw-driver to attach it to the square blade, and has full directions for applying it, and for using it when applied.

But one size is at present made, and is adapted to medium and small squares, or for squares not exceeding two feet in length. Larger sizes will be made to order.

No draughtsman who is desirous of producing neat and accurate parallel-equally-spaced lining or section drawing can afford to be without one of these instruments. The price is within the reach of all.



PRICE $1.00.

WIDELL'S

PERFECT STRETCHER KEY.

This Key is offered as a substitute for mortise joints on canvas stretchers.

Any one who has tried to make a mortise for an odd sized stretcher, or has experienced the inconvenience of a certain length in his stock of ready-made pieces running short, will understand how much time and labor is saved by this simple contrivance.

NONE OF THE MANY METAL STRETCHER KEYS HERETOFORE PUT UPON THE MARKET have been generally successful, because in each case the manner of their attachment to the frame, by means of screws, nails or staples, does not AFFORD SUFFICIENT STRENGTH. When tension is applied to the canvas, the frame is very apt to warp and break open at the joints.

Widell's Key is complete in a single casting.

No annoying screws or nails to split the wood.

A stroke of the hammer adjusts it into the slot of the mitre.

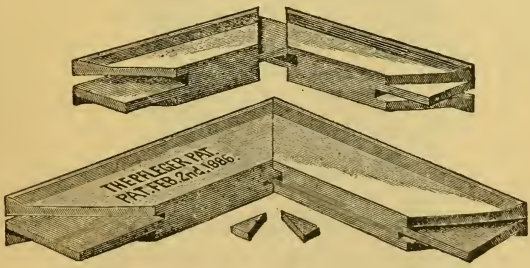
In its vice-like grip it keeps the wood from twisting and warping, and

The broad lower plate (this is the feature) holds the stretcher perfectly flat.

For cross pieces no other attachment is needed.

Price, per gross Keys, $3.75.
" " doz. " .35.

Discount to the Trade.



PFLEGER PATENT STRETCHERS.

PRICES OF STRIPS.

All lengths from	6 to 36 inches,	including wedges	.	.	.	per 100 strips,	$4.50
"	" 37 to 48	"	"	"	.	.	,	" "	9.00
"	" 49 to 60	"	"	"	.	.	.	" "	12.00

Mat Boards,

For Mounting, or for Picture Mats, with an Egg Shell or Torchon Surface. Cream Tint on one side and Buff Tint on the other.

26 × 38,	Thin,	per sheet,	.20
26 × 38,	Thick,	"	.25
26 × 38,	Double Thick,	"	.35
26 × 38,	Treble "	"	.45
30 × 40,	Thick	"	.30
30 × 40,	Double Thick,	"	.40
30 × 40,	Treble "	"	.50
38 × 50,	Double "	"	.75
38 × 50,	Treble "	"	1.00
30 × 40,	12-Ply, Smooth Surface Mat Board,	"	.50
30 × 40,	Gold Mat Board, No. 1,	"	1.65
30 × 40,	Gold Mat Board, No 2,	"	1.50

Warranted to hold its color and not tarnish.

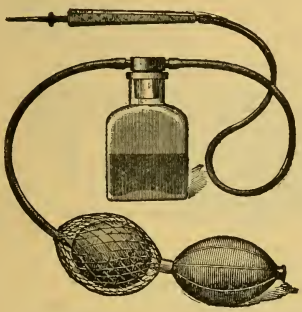
Cold Pressed Surface, Suitable for Water Color.

No. 80.	30 × 40, Thick White,	per sheet,	.35
No. 81.	30 × 40, Cream Tint,	"	.35
No. 82.	30 × 40, Sepia "	"	.35
No. 83.	30 × 40, Chocolate Tint,	"	.35
No. 84.	30 × 40, Dark Green "	"	.35
No. 85.	30 × 40, Buff "	"	.35
No. 86.	30 × 40, Grey "	"	.35
No. 87.	30 × 40, Nut Brown "	"	.35
No. 88.	30 × 40, Dark Grey "	"	.35
No. 89.	30 × 40, Black "	"	.35
No. 90.	30 × 40, Rough Cartridge Surface, Grey Tint,	"	.35
	30 × 40, " " Thick Steel Grey,	"	.30
	30 × 40, " " Carbonett,	"	.30
	30 × 40, " " Ruby (bright red),	"	.30

Cheviot Mat Boards—All Rough Surfaces.

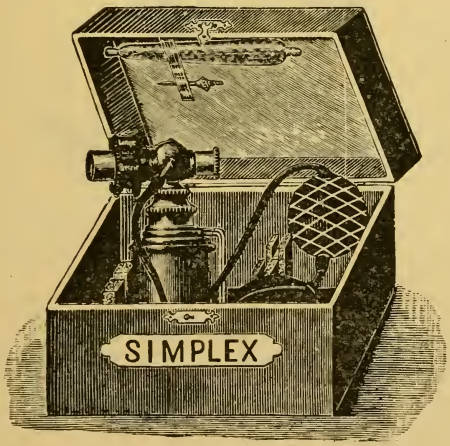
No. 20.	30 × 40, Thick Grey,	per sheet,	.40
No. 21.	30 × 40, " Old Blue,	"	.40
No. 22.	30 × 40, " Golden Rod,	"	.40
No. 23.	30 × 40, " Terra Cotta,	"	.40
No. 24.	30 × 40, " Pale Green,	"	.40
No. 25.	30 × 40, "	"	.40
No. 26.	30 × 40, "	"	.40
No. 27.	30 × 40, "	"	.40
No. 28.	30 × 40, "	"	.40
No. 29.	30 × 40, "	"	.40
No. 30.	30 × 40, "	"	.40

"Paquelin" Outfit for Pyrography, or Poker Painting.



OUTFIT No. 0 consists of a Paste Board Box containing 1 small Platinum Point, 1 Handle, 1 Bottle, Rubber Bellows, and Rubber Tubing, 1 Lamp—for beginners $5.00

OUTFIT No. 1 consists of Wood Box (specially selected so that it can be used to decorate or practice upon) containing 1 Metal Pencil (or Handle) cased with cork; 1 Platinum Point, 1 Benzoline Bottle, 1 Bottle for extra supply, 1 India-rubber Bellows, Rubber Tubing, 1 Metal Union, 1 Spirit Lamp, 1 Glass Funnel, 2 pieces of Wood, and Directions . . . $8.50

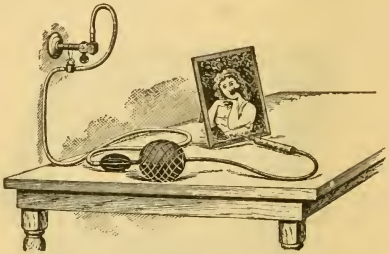


No. 4. Simplex Outfit for Pyrography.

OUTFIT No. 2, as above with one additional Platinum Point		$12.75
OUTFIT No. 3, smaller and not quite as complete . . .		5.00
Platinum Points — A (round point) or B (sharp point) (Patented)	each,	4.25
Metal Pencil or (Handle)	"	1.25
Rubber Bellows	"	1.05
Union	"	.35
Rubber Tubing	per foot,	.05
Rubbers for Union	per dozen,	.36
Hand Book, "Pyrography; or, Burnt Wood Etching," by Mrs. Maude	each,	.50

OUTFIT No. 4, "Simplex" consists of a Polished Wood Box, 1 Metal Handle covered with cork, 2 large Platinum Points, 1 nickel plated combination Lamp and Benzine Holder with hard rubber indicator, Rubber Bellows and Rubber Tubing . . . . . Net, $12 00

Gas Apparatus for Pyrography.



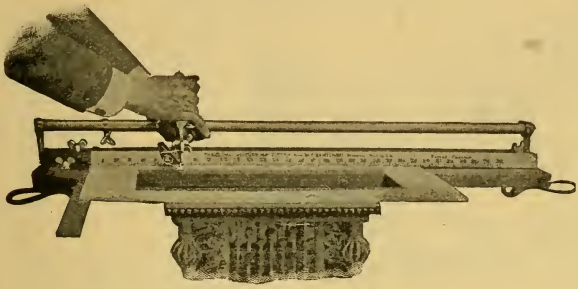
Directions for using the Gas Apparatus.

Hang the generator to the gas fixture or any other convenient object by the loop, or a string, taking care that it hangs perfectly level. Attach the hose from the end marked GAS to the fixture, removing the lava tip so as to permit free flow of gas, press the bellows gently, and when the gas has reached the point, light with a match or alcohol lamp, when the point will become incandescent and remain so with very little pressure on the bellows.

Set complete in a Wooden Box, with Tubing, Valve, Bellows, Cork Handle and Point $10.00

Extra Points, large	3.50
" " small	3.00

The Climax Picture Mat Cutter.



ONLY RELIABLE MACHINE MADE.

Positively the Cheapest Mat Cutter on the Market.

DIRECTIONS.

Square your mat board on the outside to just the size wanted and then place it face down on the base board. Set the gauge on left for width of margin, also set the stop on steel rod. Adjust the knife to any bevel required. In cutting allow the knife to cut one-quarter inch by each corner. This will give it a clean cut and perfect corners. In cutting the mat take hold of the carriage as represented on the cut. Draw the carriage steadiiy and with an even pressure. Be sure and have the knife always sharp. The blade is very easily removed for sharpening. Polishing the blade produces a polish on the bevel of the mat.

After first sharpening blade place an oil stone under the carriage and rub the sharp point off so that it will not scratch the plate glass. You will find the carriage to run much easier.

PRICES:

Machine No. 1. Extreme length, 50 inches; width, 8 inches; weight, 30 pounds, ... $13.00

Machine No. 2. Extreme length, 40 inches; width, 8 inches; weight, 20 pounds, ... 10.00

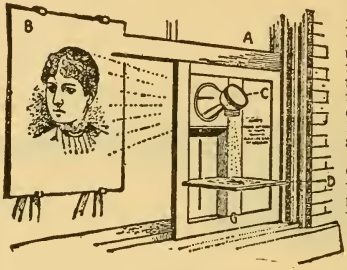
Warranted to do all we claim.

Machines sent on ten days' trial to any responsible party with expense of transportation added.

USED BY THE LEADING ART AND PICTURE DEALERS.

Aloe's Photo-Opitican.

Simple, Inexpensive and Pratical.



With this wonderful instrument a child can make a perfect portrait, landscape or intricate drawing, without the use of a negative. The cost of the instrument is absolutely the only expense to which the artist, draughtsman, or designer is put, as no artificial light, chemicals, or negatives are required.

Remember if the Photo-Optican does not do all that we claim for it, the purchaser may return it and money will be refunded.

A bunch of flowers placed in the instrument can be thrown upon your paper, canvas, or anything upon which it is your desire to draw or paint; the flowers will appear in their natural colors, each delicate shade perfectly portrayed. Should there chance to be a dew drop on petal or leaf it will sparkle in the picture in all its original brilliancy. By a simple adjustment the picture may be enlarged many times the size of the original, or reduced in like manner at will. A photograph, tintype, woodcut, drawing, colored picture, or study may be reproduced twenty times the size of the original, or, in fact almost any size from one inch to twelve feet, and the picture is not reversed.

This instrument is invaluable, and opens up many new fields to *Crayon Artists, Draughtsmen, Designers, Stained Glass Manufacturers, Tapestry and China Painters. For Exhibition purposes* enlargements may be made from almost anything at hand.

Prices. To bring the Photo-Optican *within reach of all*, (while fully aware it could be readily sold at several times the price asked,) we have decided to sell it at the following phenomenally low prices, with only a manufacturers' small profit:

No. 1247. Photo-Optican, for enlarging purposes, . net, $5.75
No. 1248. For enlarging and reducing purposes, . " 7.35

Directions for Use. Place frame in *south* window, if possible; lower window-sash until it rests firmly on top of Photo-Optican frame (see cut); exclude all light possible from the room, as the darker the room the better the results; hang a heavy dark curtain from bottom of window-sash *A*, to exclude the light that would come in through the side of window not occupied by Photo-Optican. Do not fasten this curtain to side of Photo-Optican, as it is necessary to pass the hand through this opening to place photographs or different objects on movable platform *D*. Although not absolutely essential, it is preferable to have the sun shine directly on platform *D*. Before placing the Photo-Optican in window, see that head *C* is fastened to instrument with lens pointing to platform *D*. See that screen, canvas or strainer *B* is perpendicular and square with the instrument. Now place photograph or object to be enlarged on platform *D*, set screen *B* at such distance that image will appear the desired size; move knob attached to sliding platform *D* up or down until image is distinct, and secure it in that position by turning knob to the right. Now sketch in picture with pencil or brush.

To Reduce. Screw *reducing attachment* to threads found on head *C*, and proceed in same manner as outlined above. If picture to be reduced is very large, draw out shelf *D* and place picture somewhat belo w the instrument itself, at right angles with wall of the house.

Celluloid in Sheets, for Decorating.

Pink,	20 × 50 inches,	per sheet,	$1.50
Green,	"	"	1.50
Blue,	"	"	1.50
Yellow,	"	"	1.50
White,	"	"	1.50
Straw,	"	"	1.50
Transparent,	"	"	2.00
Semi-Transparent,	"	"	1.75

"Gelatine."

White, for Etchers and Engravers.

German,	per sheet,	.30
French, Thin,	"	.35
" Medium,	"	.50
" Thick,	"	.65

Picture Cord.

Tinned or Silver Color. In Coils of 10 Yards each.

No. 0,	.15	No. 3,	.25
1,	.18	4,	.30
2,	.20	5,	.40

Gilt. In Coils of 10 Yards each.

No. 10,	.35	No. 13,	$1.00
11,	.50	14,	1.25
12,	.75	15,	1.50

Gold. In Coils of 10 Yards.

No. 20,	.50	No. 23,	$1.50
21,	.60	24,	2.00
22,	1.25	25,	2.75

Empty Porcelain Pans.

Whole Pans,	per dozen, .40	Half Pans,	per dozen, .40

Egyptian Chemical Water Colors.

Prepared expressly for Coloring Photographs.

No. 1.	Box of 14 bottles, 1 oz. each, and a bottle of Compound,	$6.00
2.	" 9 " ½ " " "	2.50
3.	" 9 " ¼ " " "	1.50
Egyptian Compound, large bottle,		.75

192¼

Blaisdell's Paper Pencils.

Will sharpen without a knife. The latest made, in Blue, Black or Red, ... each, .10

A superior article for a checking pencil; no sharpening or wasting by whittling.

Japanese Water Color Brushes.

Round and Flat, Assorted, ... Net, .15 to .35

Gilders' Cushions "for Gold Work."

No. 1, . . .75 | No. 2, . $1.00 | No. 3, . $1.25

Diamond Cream Mucilage.

Put up in Collapsible Tubes; the most convenient for handling and use, ...15

Shattuck's Stretcher Keys.

No. 0, . .	per set of 4,	.15	No. 3,	"	.30
1, . .	"	.17	4,	"	.40
2, . .	"	.20			

Simplex Stretcher Keys.

Simplex Stretcher Keys, Iron, ... per dozen, .25

Fountain Pens.

Waterman's "Ideal" Fountain Pen.

Price List.

Gold Pen and Holder Complete.					Gold Pen.	
Nos.*	Plain.	Gold Mtd.	Nos.*	Plain.	Price.	Nos.
2	$2.50	$3.50	12	$2.50	$1.25	2
3	3.50	4.50	13	3.50	1.50	3
4	4.00	5.00	14	4.00	1.75	4
5	5.00	6.00	15	5.00	2.25	5
6	6.00	7.00	16	6 00	2.75	6

*Old Style, Nos. 2 to 6; New Style, Nos. 12 to 16.

Glass Painting Colors.

Moist in Tubes.

No. 797.

Blue . .	.30	Medium Brown,	.65	Scarlet . .	$1.25
Opaque Black	.30	Yellow . .	.30	Crimson . .	1.25
Light Green .	.30	Orange . .	.30	Intense Blue .	.65
		Dark Green .	.30		

Varnish for Glass Painting, 1 ounce bottle 50

Rowney's Box of Moist Water Colors,

In Tubes.

No. 798.

A Strong Japanned Tin Box, with thumb-ring and hinged lid, fitted with 3 Camel's Hair Brushes, on sticks, and the following twelve colors in compressible tubes : —

Chinese White	Chrome Yellow	Ultramarine
Gamboge	Light Red	Lake
Yellow Ochre	Burnt Sienna	Prussian Blue
Vermilion	Sepia	Emerald Green

Price $1.50

Blue Printing a Specialty.

ON CLOTH OR PAPER.

Blue lines on a white background, or Black Process: black lines on a white background.

FROST & ADAMS CO., 37 CORNHILL, BOSTON.

The "X Ray" (Trade Mark.) Contract Records.

By Walter J. Paine.

A compact, comprehensive, well-arranged book for recording the operations of various contracts and sub-contracts, the execution of which an architect or engineer is commissioned to supervise, with the supplementary agreements in favor of or against the contractor, which commonly enter into the account, has been a long-felt want in the offices of most architects having a professional practice of any magnitude. With the increasing importance of work undertaken, the tendency of the time is to throw more responsibility upon the architect, and require of him executive as well as artistic ability. It is an unwritten law, recognized among all business men, that one cannot successfully conduct a line of business without a system of accounts ADAPTED TO HIS BUSINESS. Why should an architect, in the management of undertakings involving the expenditure of many thousands of dollars, expect to succeed while ignoring this law so indelibly stamped upon the minds of his clients. Recognizing this fact, is it not important that the ambitious young man, entering upon his professional career, form methodical habits of business management from the start?

After an experience of nearly twenty years as an architect, and after many experiments in this direction, the author of THE "X-RAY" CONTRACT RECORDS has produced a book adapted to the demands of the most methodical and thorough practitioner, however large or small his business. Each building will be assigned either one or two pages, according to the number of contracts to be awarded, whereon will appear at a glance, in most compendious form, all the architect or his bookkeeper desires to know, without the inconvenience of referring to the contract or other papers. For instance, at the top of the first page will appear the name and address of the owner; a descriptive title of the building, with its office number, location, floor area, and cost per square foot; the name and address of the surveyor employed; a place for noting any peculiarity, or other matter to be kept in mind when referring to this account. Below this the page is ruled for two contracts upon which most payments or other items will be recorded. The right-hand page, in that part of the book spaced for more than two contracts for a building, is similarly ruled for four smaller contracts. At the top of each of these divisions are spaces for entries giving name and address of contractor; nature, date and amount of contract; time limit; amount of forfeiture or bonus; dates of beginning and completing work; and terms of payment. The rulings for these divisions are arranged to tabulate entries required, showing at a glance the number and date of each payment; number of certificate on which it is made; whether paid on account of contract or extras; amount and description of charges or credits; and file number of supplementary agreement, or memorandum, relating to same, or to any vouchers or other financial documents relating to the account. Any entry required during the life of the account will be so tabulated that a glance will disclose exact condition Also whether the work is progressing with due diligence on the part of the contractor; whether a payment is due; and the amount of any charges or credits to be deducted or added. No transaction can be overlooked if the records are faithfully kept; AND ALL THIS WITHOUT ONCE BEING OBLIGED TO REFER TO THE CONTRACT OR OTHER PAPERS.

A compendious record of all information pertaining to each contract in a permanent form, as here presented, has been found especially serviceable in forming estimates for later work, and in preparing specifications and contracts that will preclude extra charges—a matter of much annoyance and chagrin to the conscientious architect.

The book will be equally serviceable for mill architects, engineers, and others having the management of contract work of any kind. It is well indexed, and considering that it costs but about three cents per contract, each architect should ask himself, "Can I afford to be without this book?"

Correspondence solicited.

Send for sample sheet, showing form of entering contracts.

Leather back and corners, cloth sides, 200 pages, Net, $6.00.

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By Frank T. Daniels, A. M. B., Instructor in Civil Engineering in Tufts College.

34 pages Text. 13 Folding Plates. Cloth, postpaid, . $1.00

The Art of Lettering.

By F. P. Valpey.

A text-book for Students and professional Draughtsmen, giving examples of plain and decorative alphabets of practical use in the lettering of plans, drawings, specifications, etc., and all who may be in any way interested in the art of correct lettering. A variety of useful and novel sketches and suggestions for PEN DRAWING of special value to Pen-and-Ink Artists, Illustrators, China Painters and Decorators. Old English and German Text Initials with artistic effects for the Penman and Engrosser. ALPHABETS of the newest and latest designs for use in advertising and up-to-date show card work, invaluable to the Signwriter. The proper wording and punctuation of signs. FIFTY DIFFERENT ALPHABETS. Sent post-paid to any address upon receipt of price, $1.00

Jacoby's Lettering.

A practical treatise on the art of Lettering, ... $3.00

Lettering for Draftsmen, Engineers and Students.

A practical system of Freehand Lettering for Working Drawings, by CHARLES W. REINHARDT, Chief Draftsman for "Engineering News." Oblong (8x11 inches), boards, 23 pages text, 44 illustrations, and 9 full-page plates. Price. $1.00

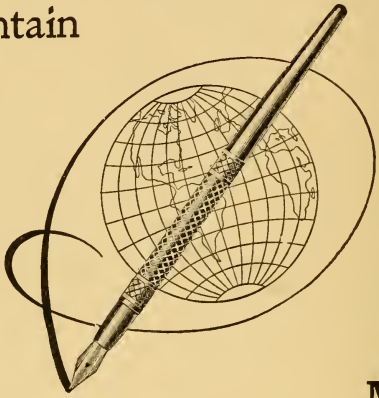
Railroad Crayon for the use of Car Inspectors, Warehousemen, Baggagemen and all kinds of Mechanics

For marking on rough surfaces. Foundrymen will find it much more useful and nicer to handle than the old style piece of chalk. It does not soil the hands or clothing. The mark will not wash off in the rain, but can be rubbed off as easy as chalk. The mark is fireproof, making it useful for Blacksmiths or Ironworkers. It will last longer than any substance used for marking, and being the most durable it is actually the cheapest for rough work. We furnish samples and price free to railroads and large shops. Size, 5x½x½ inch.

Price, ... per gross, $2.50
Dustless Crayons . . . . . " .50

Waterman's Ideal

Fountain Pen



Satisfaction Guaranteed, or Money Refunded.

Makes its mark all around the World.

Handier than a pencil,
because you don't have to sharpen it.
Quicker than a regular pen,
because you don't have to dip it.
Cleaner than either,
because it neither crocks nor spills.
Better than all others,
because it is ready when you are.
The Best Present,
because the receiver remembers you all day long for many years.

Waterman's Ideal Fountain Pen.

A reliable fountain pen is now regarded everywhere by progressive people as the most practical and convenient writing instrument—a grateful relief from the drudgery of "dip" pens and untidy inkstands. **The very best fountain pen is "Waterman's Ideal."**

It is the best known and known to be the best fountain pen the world over. It is always ready, and writes continuously without shaking. It has the best Gold pens that can be made, and **we guarantee to refund your money if the pen is not satisfactory.**

The new style holders, Nos. 12 to 16, have advantages over any other holder made:

They **have no shoulders,** and thus they **are smooth and pleasant for the fingers to hold** (see cut):

Their new caps, fitted on the barrel above instead of below the ink joint, **do not,** in removal, tend to **loosen or tighten the ink joint:** they protect it from breaking; **and they always fit** either end of the holder equally **well** in spite of unequal wear.

Price List.

Gold Pen and Holder.		Price of Holder.	Gold Pen.	
Numbers.	Plain.		Price.	Size.
2, 12 or 22 . . .	$2.50	$1.75	$1.25	2
3, 13, 23 or 43 .	3.50	2.25	1.50	3
4, 14, 24 or 44 .	4.00	2.50	1 75	4
5, 15, 25 or 45 .	5.00	2.75	2 25	5
6, 16, 26 or 46 .	6.00	3.25	2.75	6
124 .	5.00	3 50	1.75	4
125 .	6.00	3 75	2.25	5

Edson No. 2, Plain Black Holder $2.00
" " 3, " " " 3 00
"Remex" " " " 1 25

The Seton Adhesive Mounting and Binding Tape.

Put up especially for the use of Draughtsmen and all who have occasion to mount or stretch paper for drawing, designing, or painting, and for binding drawings to prevent them from being torn.

What is it? It is a cloth strip in rolls, made of a superior quality of cloth especially adapted to the purpose intended. The adhesive is applied by special machinery to secure uniform and even distribution; it is a glue compound, formulated to adhere strongly, moisten quickly, and dry rapidly; it has all the desirable qualities attainable in an ahesive tape for mounting or stretching drawing paper, and for binding and preserving drawings.

Who use it? Artists, Designers, Engineers, Architects, Draughtsmen, and all who have occasion to stretch paper, or any fabric, for laying out drawings.

Why use it? It is neat, convenient, economical, practical, reliable, and superior to paste, mucilage, or thumb tacks.

The Old and Conventional Way

to mount or stretch a sheet of drawing paper was to wet it, coat the edges with mucilage or some other of the commercial adhesives, stand over it and patiently coax it to stick. *Did it stick?* That depended on the quality of the adhesive used, and the patience of the operator. After the drawing was cut from the board, the remaining paper had to be soaked and scraped off, which took patience and much valuable time.

The New Way

is to wet the sheet, lay it flat upon the board, cut four pieces of Seton Tape from the roll, pass a wet sponge over the adhesive side, place the pieces around the edge of paper—half of the strip on the paper and half on the board—rub down firmly, and set aside to dry. You will have a perfect stretch, and will not be annoyed with sticky paste, mucilage, or dirty brushes. After the paper is cut from the board, you can readily strip the remaining tape without any trouble or waste of time.

For Binding and Preserving Drawings.

One of the most valuable features of this method of stretching drawing paper is that the tape becomes a binding to prevent the edges of the drawing from being torn, or it may be used for binding the edges by laying down strips at the point where the drawing is to be cut from the board. It can also be used to bind the edges of any unmounted drawing. For binding and *mending* purposes it is invaluable. *Full instructions for stretching and binding Drawings are sent with each roll.*

The tape is put up in 100 foot rolls, in a neat, sealed paper box; the end passing through a slit in the periphery of the box, so that it can be drawn out and cut off in lengths to suit. *Absolutely no waste.*

Price, 100 foot rolls, ... each, .50

Special price made for quantity.

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